

APPENDIX A

EPA's Natural Events Policy

MEMORANDUM

SUBJECT: Areas Affected by PM-10 Natural Events

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Purpose

This memorandum sets forth the Environmental Protection Agency's (EPA's) policy for protecting public health in areas where the PM-10 (particulate matter having a nominal aerodynamic diameter less than or equal to 10 microns) national ambient air quality standards (NAAQS) are violated due to natural events. This policy will be followed in implementing the PM-10 NAAQS until it is superseded. ¹ The

¹This document contains EPA policy and, therefore, does not establish or affect legal rights or obligations. It does not establish a binding norm and it is not finally determinative of the issues addressed. In applying this policy in any particular case, the EPA will consider its applicability to the specific facts of that case, the underlying validity of the interpretations set forth in this memorandum, and any other relevant considerations, including

need for revisions to this policy will be considered by EPA, State agencies and the Federal Advisory Committee Act's Particulate Matter/Ozone/Regional Haze Subcommittee if the NAAQS for particulate matter are revised.

Three categories of natural events have been identified as affecting the PM-10 NAAQS: (1) volcanic and seismic activity, (2) wildland fires, and (3) high wind events. These PM-10

any that may be required under applicable law and regulations.

natural events are defined further below. If other significant categories of natural events are identified, they may be added to this policy in the future.²

Background

Prior to the 1990 Clean Air Act Amendments (Act), the Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (exceptional events guideline) and Appendix K to 40 CFR, part 50, were issued by EPA to address, in part, the situation where natural sources strongly influence an area's PM-10 air quality. To avoid imposing potentially unreasonable State implementation plan (SIP) requirements on such areas, EPA provided for the exclusion of certain natural source data from nonattainment determinations. Thus, Appendix K provides, in part, that measured exceedances of the PM-10 NAAQS in an area may be discounted from decisions regarding nonattainment status if the data are shown to be influenced by uncontrollable events caused by natural sources of particulate matter. The 1986 exceptional events guideline contains EPA's guidance regarding the process States should follow when dealing with PM-10 air quality data that may be eligible for the adjustments authorized under section 2.4 of Appendix K.

Subsequently, the Act added section 188(f) which provides EPA with discretionary statutory authority to waive either a specific attainment date or certain planning requirements for serious PM-10 nonattainment areas that are impacted significantly by nonanthropogenic sources. The EPA states in current PM-10 guidance documents that it interprets the section 188(f) waiver provision to mean that the data exclusion policy contained in Appendix K and the procedures described in the exceptional events guideline no longer apply.

²Other types of temporary or exceptional events that can impact ambient PM-10 concentrations are structural fires, chemical spills, industrial accidents, and clean-up activities following a major disaster. The EPA's Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events, July 1986, is still applicable for treating air quality data resulting from these types of exceptional, anthropogenic events.

Under this natural events policy, those statements no longer reflect EPA's interpretation of the relationship between the section 188(f) waiver provision, Appendix K, and the exceptional events guideline and should be treated as revised to the extent described herein.

In establishing this natural events policy, EPA now believes that, under certain circumstances, it is appropriate to again exclude PM-10 air quality data that are attributable to uncontrollable natural events from the decisions regarding an area's nonattainment status. The discussion in the Appendix at the end of this memorandum briefly describes the legal rationale underlying this revised interpretation.

Description of Policy

The policy described in this document addresses PM-10 NAAQS violations caused by natural events in areas designated unclassifiable or attainment. It also addresses certain reclassification and redesignation questions for PM-10 nonattainment areas. This policy applies at the time the State determines that a PM-10 NAAQS has been violated due to natural events and addresses the question of what should be done to protect public health. The policy provides that EPA will: (1) exercise its discretion under section 107(d)(3) not to redesignate areas as nonattainment if the State develops and implements a plan to respond to the health impacts of natural events; and, (2) redesignate nonattainment areas as attainment by applying Appendix K, on a case-by-case basis, to discount data in circumstances where an area would attain but for exceedances that result from uncontrollable natural events.

The guiding principles followed in developing this policy are:

1. Protection of public health is the highest priority of Federal, State, and local air pollution control agencies.
2. The public must be informed whenever the air quality in an area is unhealthy.³

³The air quality is considered unhealthy whenever the 24-hour PM-10 NAAQS is exceeded. The short-term PM-10 NAAQS is exceeded when the 24-hour average PM-10 concentration is

3. All valid ambient air quality data should be submitted to the EPA Aerometric Information Retrieval System (AIRS) and made available for public access.

4. State and local agencies must take appropriate reasonable measures to safeguard public health regardless of the source of PM-10 emissions.

5. Emission controls should be applied to sources that contribute to exceedances of the PM-10 NAAQS when those controls will result in fewer violations of the standards.

greater than 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The 24-hour NAAQS is violated when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu\text{g}/\text{m}^3$ is greater than 1.0, as determined by procedures described in Appendix K.

Definition of PM-10 Natural Events

Volcanic and seismic activities : Ambient PM-10 concentrations caused by volcanic eruptions or seismic activity will be treated as due to natural events. Volcanic eruptions contribute to ambient PM-10 concentrations in two ways: (1) with emissions of primary PM-10 (e.g., ash), and (2) with emissions of precursor pollutants (e.g., sulfur dioxide) that react to form secondary particulate matter. Seismic activity (e.g., earthquakes) can also contribute to ambient PM-10 concentrations by shaking the ground, causing structures to collapse and otherwise raising dust (primary PM-10 emissions).

Also, emissions caused by anthropogenic activities that re-entrain volcanic ash during the first year (12 months) following an event will be treated as due to the natural event. One year is considered adequate time for cleaning ash deposits from areas where anthropogenic activities (e.g., vehicle traffic) would cause reentrainment. After 1 year, only emissions resulting from reentrainment of ash by high winds will be treated as due to a natural event.

Wildland fires : Ambient PM-10 concentrations caused by smoke from wildland fires will be treated as due to natural events if the fires are unwanted fires, not designated or managed as prescribed fires, and requiring appropriate suppression action by the wildlands manager. ⁴

For the purposes of this policy, wildland fire natural events are limited to unwanted fires that do not meet a prescription (wildfires) and, therefore, require appropriate suppression actions. Wildland prescribed fires, burning of

⁴The EPA recognizes and endorses the Federal Wildland Fire Policies adopted by the Departments of Interior and Agriculture in December 1995. These policies refer to all fires on sparsely populated lands managed by Federal agencies (e.g., national parks, national forests, grasslands, etc.) as wildland fires. The wildland fires term includes unwanted fires that do not meet a prescription (wildfires), management-ignited prescribed fires, and naturally-ignited fires that meet a prescription (prescribed natural fire). Only wildland fires that meet a prescription may be used to accomplish land and resource management objectives.

forest harvest residues, agricultural burning, and fires for land clearing are not covered by this natural events policy. The EPA will develop broader guidance in the near future to address issues raised by smoke emissions from wildland prescribed fires and other policy issues surrounding prevention of significant deterioration, conformity, visibility protection programs and regional haze.

High Winds: Ambient PM-10 concentrations due to dust raised by unusually high winds will be treated as due to uncontrollable natural events under the following conditions: (1) the dust originated from nonanthropogenic sources, or (2) the dust originated from anthropogenic sources controlled with best available control measures (BACM). ⁵

The BACM must be implemented at contributing anthropogenic sources of dust in order for PM-10 NAAQS exceedances to be treated as due to uncontrollable natural events under this policy. Therefore, BACM must be implemented for anthropogenic dust sources contributing to NAAQS exceedances in attainment and unclassifiable areas and in moderate PM-10 nonattainment areas. In unclassifiable and attainment areas, BACM must be implemented for those contributing sources for which it has been defined within 3 years after the first NAAQS violation attributed to high wind events or from the date of this policy. In these same areas, implementation should be as expeditious as practicable for sources for which BACM are undefined.

The conditions that create high wind events vary from area to area with soil type, precipitation and the speed of wind gusts. Therefore, the State must determine the unusually high wind conditions that will overcome BACM in each region or subregion of the State.

Response to NAAQS Violations

If natural events cause ambient concentrations of PM-10 to violate a NAAQS, a plan should be developed to address future

⁵BACM for PM-10 are techniques that achieve the maximum degree of emissions reduction from a source as determined on a case-by-case basis considering technological and economic feasibility (59 FR 42010, August 16, 1994).

events.⁶ A natural events action plan (NEAP) should include commitments to:

1. Establish public notification and education programs. Such programs may be designed to educate the public about the short-term and long-term harmful effects that high concentrations of PM-10 could have on their health and inform them that: (a) certain types of natural events affect the air quality of the area periodically, (b) a natural event is imminent, and (c) specific actions are being taken to minimize the health impacts of events.

2. Minimize public exposure to high concentrations of PM-10 due to future natural events. Programs to minimize public exposure should: (a) identify the people most at risk, (b) notify the at-risk population that a natural event is imminent or currently taking place, (c) suggest actions to be taken by the public to minimize their exposure to high concentrations of PM-10, and (d) suggest precautions to take if exposure cannot be avoided.

3. Abate or minimize appropriate contributing controllable sources of PM-10. Programs to minimize PM-10 emissions may include:

- (a) volcanic and seismic activities - cleaning ash and dust deposits from areas where it would be re-entrained into the air by anthropogenic activities;

- (b) wildland fires - prohibition of other burning activities during wildland fire events and steps to minimize fuel loadings in areas vulnerable to fire. Appropriate suppression actions, as determined by the wildlands manager, should be taken for fires that do not meet a prescription. The Federal Wildland Fire Policies require that fire management plans (FMP) be developed

⁶The annual PM-10 NAAQS is violated if the expected average annual arithmetic mean concentration for the past 3 calendar years is greater than 50 $\mu\text{g}/\text{m}^3$. Several elevated 24-hour PM-10 concentrations caused by natural events can potentially cause the annual NAAQS (which is an annual arithmetic mean of 24-hour concentrations) to be exceeded. If natural events cause the annual NAAQS to be violated, one NEAP for the area will cover both the 24-hour and annual NAAQS.

for all Federal lands with burnable vegetation.⁷ It is anticipated that a goal of FMP will be to prevent NAAQS exceedances caused by wildland fires. Therefore, EPA envisions treating future FMP as acceptable plans for mitigating the public health impacts of smoke from wildland fires on Federal lands. Similar FMP should be developed to serve the same purpose for State and private wildlands.

(c) High winds - application of BACM to any sources of soil that have been disturbed by anthropogenic activities. The BACM application criteria require analysis of the technological and economic feasibility of individual control measures on a case-by-case basis. The NEAP should include analyses of BACM for contributing sources. The BACM for windblown dust include, but are not limited to, application of chemical dust suppressants to unpaved roads, parking lots and open areas; dust suppression at construction sites; use of conservation farming practices on agricultural lands; tree

⁷FMP are not in place for all Federal lands at this time. These plans will be developed by Federal land managers in conjunction with all stakeholders including Federal, State and local air management agencies. The FMP will integrate fire, as a natural ecological process, into land and resource management plans and will form the basis for management actions taken on wildland fires. The FMP must include prescriptions for any use of fire to meet land and resource management objectives.

The EPA anticipates that FMP will achieve an acceptable balance between forest health and public health concerns. Public health concerns caused by the potential effects of smoke on air quality from wildland fires will be addressed in FMP through smoke management plans and other measures. Smoke management plans attempt to minimize smoke impacts by monitoring fire behavior, meteorology and air quality during the fire and by publicly announcing forecasts of likely smoke conditions in communities impacted by ongoing fires. Since FMP will treat fire as a natural ecological process, the impact of wildland fires on air quality and regional haze is expected to increase in the future. Therefore, EPA will encourage Federal land management agencies to support air quality monitoring near fires, to assess air and haze impacts, and to develop a fire information data base and regional-scale smoke management plans.

rows and other physical wind breaks; restricting or prohibiting recreational off-road vehicle activities; and use of surface coverings. If BACM are not defined for the anthropogenic sources in question, step 4 below is required.

4. Identify, study and implement practical mitigating measures as necessary. The NEAP may include commitments to conduct pilot tests of new emission reduction techniques. For example, it may be desirable to test the feasibility and effectiveness of new strategies for minimizing sources of windblown dust through pilot programs. The plan must include a timely schedule for conducting such studies and implementing measures that are technologically and economically feasible.

5. Periodically reevaluate: (a) the conditions causing violations of a PM-10 NAAQS in the area, (b) the status of implementation of the NEAP, and (c) the adequacy of the actions being implemented. The State should reevaluate the NEAP for an area every 5 years at a minimum and make appropriate changes to the plan.

Form and Timing of the Response

The NEAP should be developed by the State air pollution control agency in conjunction with the stakeholders affected by the plan. Development of a NEAP for wildland fires should include input from Federal, State and private land managers in areas vulnerable to fire. Also, agencies responsible for suppressing fires and the citizens in the affected area should be involved in developing the plan. Development of a NEAP for high- wind events should include input from Federal, State and private managers of open desert lands, rangelands, agricultural lands; the construction industry; and organizations promoting the use of recreational off-road vehicles. Development of a NEAP for volcanic and seismic activities should include input from geophysicists and public works officials who will be responsible for ash removal and disposal. The plan should include documented agreements among the stakeholders as to planned actions, the implementation schedule, and the parties responsible for carrying out those actions.

At a minimum, States should develop NEAP for any areas where natural events cause or have caused a PM-10 NAAQS to be violated within 18 months of the violation or the date this policy is issued. The NEAP should be made available for public

review and comment and may, but are not required to, be adopted as revisions to the SIP if current SIP rules are not revised. Final plans should be submitted to EPA for review and comment.

Documentation of Natural Events

In circumstances where a State has reason to believe that natural events have caused measured exceedances of the NAAQS, the State is responsible for establishing a clear causal relationship between the measured exceedance and the natural event. Supporting documentation concerning the natural event could include filter analysis, meteorological data (e.g., wind speed and wind direction to support a source receptor relationship), modeling and receptor analysis, videos and/or photographs of the event and the resulting emissions, maps of the area showing sources of emissions and the area affected by the event, and news accounts of the event.

In the case of high-wind events where the sources of dust are anthropogenic, the State must document that BACM were required for those sources, and the sources were in compliance at the time of the high-wind event. If BACM are not required for some dust sources, the NEAP developed must include agreements with appropriate stakeholders to minimize future emissions from such sources using BACM.

The type and amount of documentation provided for each event should be sufficient to demonstrate that the natural event occurred, and that it impacted a particular monitoring site in such a way as to cause the PM-10 concentrations measured. This documentation should also provide evidence that, absent the emissions from the natural event, concentrations of PM-10 at the monitoring site under consideration would not cause a NAAQS exceedance.

The State should also make the documentation of natural events and their impact on measured air quality available to the public for review. This may be accomplished through a number of means, such as the publishing of newspaper announcements, periodic reports on air quality in the area, and through public hearings. This would serve to allow the public an opportunity to comment on whether the causal relationship between the natural event and the air quality measurement is convincing. Also, open hearings, where State and local regulatory boards review the documentation, are

useful forums in which to notify the public of potentially-important policy decisions.

When air quality data affected by a natural event are submitted to EPA for inclusion into the AIRS data base, the State should request that a flag be placed on the data to indicate that a natural event was involved. Documentation to support the flagged data should be maintained by the State. A copy of the documentation should be sent to the relevant EPA Regional Office monitoring representative no later than 180 days from the time the exceedance occurred or from the date of this policy for past events. The Regional Office will acknowledge receipt of the documentation and confirm that the natural event data were flagged within 60 days.

Current PM-10 Nonattainment Areas

States may request that a moderate nonattainment area not be reclassified as serious if it can be demonstrated that the area would attain the standards by the statutory attainment date but for emissions caused by natural events. Similarly, States may request redesignation of nonattainment areas to attainment if it can be demonstrated that the area would be meeting the NAAQS but for the emissions caused by natural events. This policy applies to emissions caused by natural events that have occurred since January 1, 1994. ⁸

Approval of the above requests will be made by EPA on a case-by-case basis as determined by the sufficiency of the information submitted by the State to substantiate its claim. At a minimum, the State must have adopted a SIP for the area which demonstrates that, but for the emissions from natural events, the area would be able to attain the NAAQS. All of the requirements under section 107(d)(3)(E) of the Act must also be satisfied before an area can be redesignated to attainment. Those requirements include the submittal of a maintenance plan under section 175A, among other things. The

⁸The 1990 Amendments to the Clean Air Act required that control measures for anthropogenic sources in PM-10 nonattainment areas be implemented by the end of 1993. Therefore, this policy is made retroactive to January 1, 1994 so that NAAQS exceedances that may prevent areas from having sufficient clean air quality data to meet the standards will be covered by this policy.

maintenance plan for areas affected by natural events must include a NEAP.

Failure to Submit a Natural Events Action Plan

If a State fails to submit an adequate NEAP within 18 months in response to violations of a PM-10 NAAQS, EPA will notify the governor of the State that the area should be redesignated as nonattainment. The EPA's action, in such instances, would be authorized under the Act based on the conclusion that the health of citizens affected by such events is not being protected by the State.

Once the area violating the NAAQS is designated nonattainment, the State will be required to adopt a federally- enforceable SIP revision and address the sources of PM-10 emissions. Most likely, the SIP revision will include many of the same mitigative measures that could have been included in a NEAP.

APPENDIX

INTERPRETATION OF THE CLEAN AIR ACT (ACT) AS AMENDED IN 1990

Section 107(d)(4)(B) of the Act, as amended in 1990, provided EPA with the authority to designate initial areas as nonattainment for PM-10. Where such determinations involved an assessment of a potential PM-10 nonattainment area's air quality data, Congress expressly required such assessments to be made in accordance with Appendix K (section 107(d)(4)(B)(ii)). Since, upon enactment, Congress did not alter or revise Appendix K in any way, all the provisions of Appendix K, including section 2.4, remained applicable under the Act. Among other things, section 2.4 authorizes EPA to discount air quality data that are attributable to "an uncontrollable event caused by natural sources" of PM-10. Consequently, if an area's nonattainment problem was attributable to uncontrollable natural sources, application of section 2.4 of Appendix K would allow the data from the uncontrollable natural event to be excluded from regulatory determinations regarding an area's nonattainment status.

The Act also added section 188(f) which specifically addresses the adverse influence of nonanthropogenic PM-10 sources. This section provides EPA with discretionary authority to waive a specific attainment date for all areas or certain planning requirements for serious PM-10 nonattainment areas that are significantly impacted by nonanthropogenic sources.

The EPA previously interpreted the inclusion of such an express waiver provision in the 1990 Amendments as implying that Congress may have intended to limit the application of section 2.4 of Appendix K. The argument in support of this interpretation was that in contrast to section 2.4 of Appendix K, which contemplates the discounting of data due to emissions from certain events, the section 188(f) waiver provisions envisioned that adjustments prompted by adverse air quality impacts that are attributable to data from natural uncontrollable sources of PM-10 should be made only after all the data have been considered and the area has been designated nonattainment.

The EPA, however, believes that this is not the only reasonable interpretation of the Act's provisions that is possible. The EPA believes that the congressional directive in section 107(d)(4)(B)(ii) to base designation decisions on

Appendix K, and the differences in how section 188(f) and Appendix K address issues related to emissions from natural sources, indicate that it is not necessary to conclude that section 188(f) limits the application of section 2.4 of Appendix K. Rather, it is possible to view both section 188(f) and section 2.4 of Appendix K as being operative and dealing with related but distinct aspects of the issues connected with emissions from natural PM-10 sources.

The starting point for this analysis is section 107(d)(4)(B)(ii), which, by operation of law, designated nonattainment any area with data showing a violation of the PM-10 NAAQS before January 1, 1989 "(as determined under part 50, appendix K of title 40 of the Code of Federal Regulations)." In that section, Congress required the use of Appendix K in designating areas nonattainment without indicating that any portion of Appendix K was to be considered invalid. Thus, that provision indicates that Congress intended designation decisions to be based on that appendix, including the procedures in section 2.4 regarding exceptional events.

Notably, section 2.4 defines an exceptional event as "an uncontrollable event caused by natural sources of particulate matter or an event that is not expected to recur at a given location." Thus, exceptional events include both uncontrollable natural sources and nonrecurring events related to any kind of source of particulate matter. Section 2.4 further provides that data from such events may be discounted (i.e., EPA may compensate for such data or exclude such data entirely from decisions regarding an area). Consequently, Appendix K contemplates that data from "exceptional events" may be discounted, including, but not limited to, data due to emissions from uncontrollable natural events.

On the other hand, section 188(f), which was enacted by Congress in the same amendments as section 107(d)(4)(B)(ii), discusses PM-10 natural sources in terms of whether they are "anthropogenic" or "nonanthropogenic." It does not discuss such sources or emissions in the terms of Appendix K (i.e., it does not discuss matters in terms of exceptional or nonexceptional events, nor does it distinguish between uncontrollable and controllable natural sources). In general, section 188(f) provides that EPA may waive certain requirements where EPA determines that anthropogenic sources do not contribute significantly to a violation of the PM-10 standard, and that EPA may waive a specific attainment date if

it determines that the contribution of nonanthropogenic emissions to a violation is demonstrated to be "significant."

As Congress, without express exception, directed the use of Appendix K in determining whether areas were attaining the PM-10 standard, EPA believes it is reasonable to interpret section 188(f) as not limiting the use of that appendix, provided that such an interpretation does not render section 188(f) invalid. The EPA believes that the approach taken in this natural events policy does not do that, and that it represents a reasonable harmonization of these provisions of the Act and the language of Appendix K regarding exceptional events.

Under EPA's revised interpretation, section 188(f) continues to have force and effect. As section 188(f) addresses the issues in terms of "anthropogenic" and "nonanthropogenic" sources, not in terms of exceptional events (which are defined in Appendix K as both uncontrollable natural events and nonrecurring events from both natural and other sources), it is possible to view the waivers of section 188(f) as being potentially applicable only to areas that are designated nonattainment because the data do not qualify for adjustment under Appendix K. For such areas, it may be reasonable and appropriate to grant waivers from some requirements that simply do not make sense in light of the nature of the sources generating the PM-10 problem in the area. Thus, EPA's new interpretation does not render section 188(f) meaningless. Consequently, EPA believes that the exercise of its discretionary authority under Appendix K to discount or de-weight air quality data that are affected by uncontrollable natural sources of PM-10 is reasonable and appropriate.

APPENDIX B

Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events

A-2-1

United States
Environmental Protection
Agency

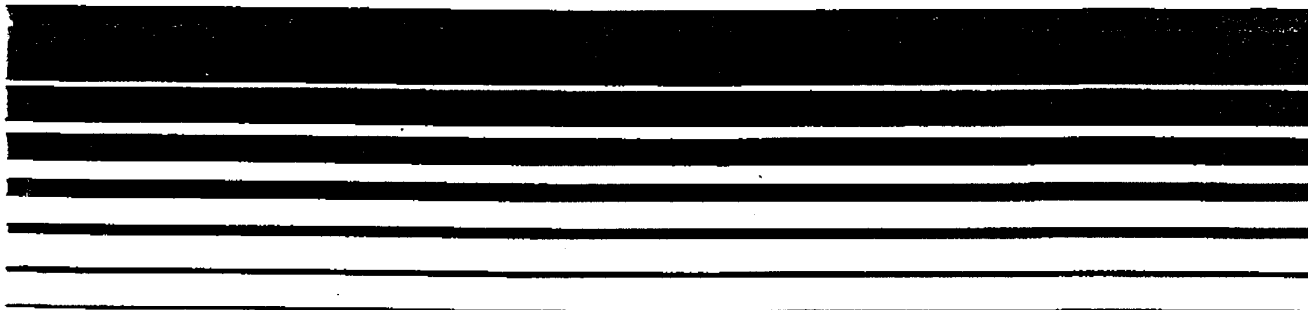
Office of Air Quality
Planning and Standards
Research Triangle Park NC 27711

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Air



Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events



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Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Monitoring and Data Analysis Division
Research Triangle Park, NC 27711

July 1986

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SECTION 1

INTRODUCTION

Federal, State, and local air pollution control officials have expressed a great deal of concern regarding the handling of air quality data that are influenced by both natural and man-made events that are considered exceptional. These events are considered exceptional for two reasons; they are not expected to recur routinely at a given location, or they are possibly uncontrollable or unrealistic to control through the State Implementation Plan (SIP) process. In some cases in the past, air quality data collected during these "exceptional" events have not been submitted to the National Air Data Bank (NADB) because State or local agencies were concerned about the potential misuse of such data. This guideline document was prepared as a response to this concern and is intended to provide national guidance for identifying ("flagging") and using ambient air quality data influenced by exceptional events.

The guidance includes definitions of 18 acceptable exceptional events and describes the procedures for submitting flagged data influenced by these events to EPA's Aerometric Information Retrieval System (AIRS). The Appendix provides information on other events which were also initially proposed for consideration as "exceptional" but are not included in the final flagging system.

The need for a flagging (or "identification") system was implied in previous Agency guidelines and regulations. The first example is Office of Air Quality Planning and Standards' Guideline No. 1.2-008 (revised February 1977) entitled, "Guidelines for the Interpretation of Air Quality Standards."¹

This guideline addressed the submission and use of all valid air quality data for determining an area's overall compliance status with respect to National Ambient Air Quality Standards (NAAQS). Issue 9 in the guideline posed the following question: "How should particulate matter (PM), carbon monoxide (CO), and other pollutant concentrations resulting from severe recurring dust storms, forest fires, volcanic activity, and other natural sources be taken into account in determining compliance with NAAQS?" The guideline recommended, "Regardless of the source, ambient pollutant concentrations exceeding a NAAQS constitute a violation." The guideline, however, implied a need for data flagging by further stating, "Detailed information establishing that violations are due to uncontrollable natural sources may be used in determining the feasibility of modifying control strategies."

The second example is in 40 CFR 51.12 (d), the regulations for the development, adoption, and submittal of SIP's.² The regulations stated: "For purposes of developing a control strategy, data derived from measurements of existing ambient levels of a pollutant may be adjusted to reflect the extent to which occasional natural or accidental phenomena, e.g., dust storms, forest fires, industrial accidents, demonstrably affected such ambient levels during the measurement period."

A third example is provided in the March 20, 1984, 40 CFR Part 50 Federal Register proposed revisions to the national ambient air quality standards for particulate matter.³ Appendix K of Part 50 would allow consideration of the influence of rare or unusual events on PM₁₀ data by various techniques.

All three examples, OAQPS 1.2-008, 40 CFR 51.12(d), and the proposed 40 CFR 50 Appendix K reflect concern that some air quality data associated with the occurrence of certain types of events may require special consideration in order to avoid misuse.

The guideline's general policy is to allow consideration of excluding flagged data from use in regulatory actions. The actual exclusion of the use of flagged data would only be allowed if, as a result of a public review process, the responsible government agency e.g., the State Air Agency during the State regulatory process, and the U. S. EPA during the Federal review/ approval process, determines that the data are inappropriate for use in a specific regulatory activity. This consideration for exclusion of flagged data carries with it no prior presumption towards use or non-use of flagged data.

By establishing uniform procedures and criteria for flagging and determining the use of data associated with exceptional events, EPA expects data collectors to submit to the NADB all valid ambient air quality data, i.e., data collected in accordance with 40 CFR 58. Having a complete national air quality data file will provide a data base adequate to evaluate and substantiate the impact of exceptional events on air quality and to assist users in interpreting the data.

The guideline provides criteria and procedures by which potential users of air quality data can be informed of "exceptional events" which may have influenced the data. The guideline has no regulatory or legal significance regarding use of any air quality data. Use or non-use of air quality data, whether flagged or not, must be subjected to full public disclosure and rulemaking procedures.

The criteria for identification of "exceptional events" are designed to be expansive enough to encompass most good faith claims by State and local agencies of when data should be considered for special treatment. It is not intended to reflect EPA's views on the validity of these claims. The flagging of data is merely a way for a State or local agency to state that it regards the data as influenced by exceptional events, and may later claim that the data should be discounted for certain purposes.

As experience with this guideline is gained, periodic revisions may be made. The guideline is to be implemented on a trial basis for approximately 2 years, after which the Standing Air Monitoring Work Group (SAMWG) will assess its effectiveness and make any appropriate recommendations for revision. The SAMWG is composed of Federal, State, and local air pollution control officials who constitute a forum for discussion and resolution of ambient air quality monitoring issues.

SECTION 2

PURPOSE AND MANAGEMENT OF THE FLAGGING SYSTEM

The basic purpose of the flagging system is to identify those air quality measurements that are influenced by exceptional events. These are events which, if unidentified, could lead to possible misinterpretation or misuse of the data. Because the flagging system relies heavily on the identification and understanding of events that may have influenced a particular air quality measurement, its major thrust is information exchange. If a particular air quality measurement is influenced by an exceptional event, it is important for all those who may review and ultimately use the data to be aware of this influence and to take care that such data are not misinterpreted or misused. Knowledge and understanding of what the data represent are critical in the overall air quality planning process.

Under the flagging system, State and local air pollution control agencies will be responsible for initially identifying and documenting data influenced by exceptional events. These agencies also must develop the appropriate background information used to support the decision to flag an individual piece of data; they must submit the information to EPA for concurrence and make it available for the public's review upon request. Because of the potential implications on the use of flagged data, the agency flagging the data must (as discussed in Section 4.2) clearly demonstrate a causality between the exceptional event and the flagged air quality data.

2.1 PRE-AIRS PROCEDURES

Until the Aerometric Information Retrieval System (AIRS) is operational, the flagged data should be specifically identified and discussed in the

annual State and Local Air Monitoring System (SLAMS) Report. The EPA Regional Offices will be responsible for review and concurrence or non-concurrence with the flag, except for data related to stratospheric ozone intrusions which will be reviewed and concurred or non-concurred with by OAQPS. States should initiate discussions with EPA Regional Offices regarding data that may be flagged as soon as possible after data collection, and should not wait until the annual SLAMS Report is submitted.

2.2 POST-AIRS PROCEDURES

After AIRS is operational, all flagged data will be entered and stored in the AIRS; and as data are retrieved, a user will be able to identify those data that have been flagged. Each exceptional event will be assigned a unique flag code by the AIRS for the exceptional events included in this guideline. The procedure for submitting, reviewing, and assigning appropriate flags for data identified by State or local agencies to be associated with an exceptional event are as follows:

- (1) The State or local agency should submit their flagged data with the proper unique flag code to AIRS as part of their routine data submissions to EPA's data bank.

- (2) The State or local agency should provide to the Regional Office, within 30 days, appropriate documentation and demonstration of causality as discussed in Section 4.4.

- (3) The Regional Office should concur or non-concur with the data flag and notify the State or local agency within 30 days of receipt of documentation from the agency. If the Regional Office concurs with the flagging of the data, they will change the unique flag code associated with the data to

designate EPA Regional Office concurrence with the flag. If the Region non-concurs with the data flag, the State or local agency flag will remain in AIRS with the particular data point. The non-concurrence by the Regional Office could be revised upon subsequent submission of adequate justification by the State and local agency. The exception to the procedure is stratospheric ozone intrusion, which is to be reviewed and acted upon by OAQPS rather than the Regional Office.

(4) Those States electing to submit to NADB only an annual SLAMS report rather than raw data should include a section in their annual report which lists all flagged data, SAROAD I.D., date of occurrence, and type of acceptable exceptional event.

Notification must be sent to AIRS and the Regional Office by the responsible State or local agency when flagged data are to be changed to a nonflagged status for any reason.

Two data records will be maintained in AIRS. One record will contain all the data including the flagged data, and the other will contain only data that have not been flagged. All users of the data will have access to both records, including the rationale for the flag and the EPA Regional Office concurrence or non-concurrence with the flag.

SECTION 3

USES OF FLAGGED DATA

3.1 GENERAL GUIDELINES ON THE USE OF FLAGGED DATA

Concern over the potential for misuse has made some State and local agencies reluctant to submit air quality data that were influenced by what they consider to be an exceptional event, i.e., an event that is not expected to recur routinely at a given location, or that is possibly uncontrollable or unrealistic to control through the State Implementation Plan (SIP) process. The views of Federal, State, and local agency officials have varied concerning the use of air quality data collected during an exceptional event. Some believed that air quality data collected during an exceptional event should not be used under any circumstances; some believed that all valid (i.e., collected in accordance with 40 CFR 58) data should be used (without exception); some believed that the data should be used only to determine the status of the area with respect to the NAAQS; and still others believed that the data not only should be used to determine the compliance status of the area, but also to develop trends analyses and control strategies (with some qualifications). This document addresses these differences by requiring the States (and EPA) to identify and explain the use or non-use of data influenced by exceptional events during a public review process. Furthermore, the guidance provided does not dictate any prior presumption toward use or non-use for any specific purpose.

In general, decisions on the use or non-use of flagged data will be made on a case-by-case basis for specific purposes (attainment designations, control strategies, etc.), and the public must be informed that the data exist, whether

the data are used or not. The main concern lies with understanding what the flagged data represent. Three steps usually should be taken in order to decide whether questionable data should be flagged, and to assist potential users in determining how the data should be used. The first step is to determine the portion of the measured air quality level attributable to the single event, as well as the cumulative effect of several similar exceptional events, that create substantial impacts at a monitoring site. In some cases, modeling (either source apportionment or dispersion) or other procedures may be used to determine the relative contribution of the event. The relative contribution of the event provides a better understanding of what the air quality level for the day or days in question actually represents.

The second step is to determine the area influenced by the event. In most cases, the impact will be limited. Therefore, if the data are being considered for use in or exclusion from regulatory purposes, the agency should determine the area which would be influenced by the determination.

The third step is to demonstrate how the flagged data relate to data previously collected at the monitoring site. This step is extremely critical for trends analyses and for preparing reports to the public on air quality levels for a given area. Obviously, if flagged data are used or excluded in preparing summaries of air quality data, the reader should be made aware of how the data were used.

3.2 NAAQS Status

NAAQS compliance status involves the use of data to determine whether the area represented by the data is meeting or exceeding the NAAQS for the pollutant being monitored. It is EPA's policy and a regulatory requirement to have valid

NAMS and SLAMS data (i.e., data collected in accordance with 40 CFR 58) submitted to the NADB or included in the annual SLAMS report. All data, flagged or unflagged, should be available to the public for comparison to the NAAQS to determine if exceedances have occurred. All relevant flagged data along with the reasons for flagging, and a demonstration of causality between the exceptional event and the flagged data, shall be submitted for consideration of use/non-use during any public hearing or comment period called under Sections 107, 110-113, 119, 120, 122, 123, 126, Part C or Part D of the Clean Air Act.⁴ Consideration of ambient air quality data during public reviews called under the authority of other sections or titles of the Clean Air Act, although not prohibited, does not appear to be relevant to the purpose of those reviews. For example, consideration of ambient data at a hearing held regarding automotive emissions standards may or may not be appropriate. Such consideration is neither mandatory nor prohibited.

3.3 Trends Analysis

Trends analysis involves the evaluation of the long-term trends associated with the measured levels of a given pollutant for a given area. These analyses are useful in evaluating the overall progress of the air pollution control program for the given pollutant and in understanding why the concentration levels of a pollutant are increasing or decreasing.

In some cases the data collected during an exceptional event can be used for trends analysis (as long as the analyst understands the limitations associated with the data). The trends analyses should clearly state how the flagged data were treated and to what extent the flagged data were or were not included in the analyses and why. The trends analyses also should consider

(to the extent possible) what effect the flagged data have on the overall trend line for the area in light of other confounding variables that may also affect the trend line.

3.4 SIP Regulatory Activities

The use of flagged air quality data for SIP regulatory activities (areawide or local control strategy development, SIP design values, attainment/non-attainment status, enforcement actions, etc.) shall be considered on a case-by-case basis and discussed during the public review process. Exclusion of the flagged data would only be allowed if the responsible control agency determines in conjunction with a public review that the flagged data are inappropriate for use.

SECTION 4
DEFINITION AND APPLICATION OF EXCEPTIONAL EVENTS

4.1 DEFINITIONS OF EXCEPTIONAL EVENTS

This guideline provides general definitions for these events and general criteria for their use in flagging air quality data. The application of a definition may vary from area to area because of differing air quality and control situations. For example, salting and sanding of streets for snow and ice control may be an exceptional event in the southern sections of the country, whereas they may be routine, controllable events in the northern sections. Therefore, the following definitions are only a national guide and are not meant to replace reasonable judgment on the part of the Regional, State, and local air pollution control agency officials in defining and identifying exceptional events for the purpose of flagging data.

In situations where it can be shown that the national criteria are generally inappropriate, a State Agency may propose alternate criteria to their EPA Regional office. These proposals would have to be subjected to public review within the State. The Regional office would be responsible for review and preliminary approval of the alternative criteria. The OAQPS will have final approval authority and if approved, will include the alternative criteria as a supplement to this national guideline.

With the above limitations in mind, the following general definitions have been developed to promote consistency with respect to flagging data that have been collected during an exceptional event. Whenever possible, specific criteria or terms have been used to define the event to minimize inconsistent interpretations. Of course, no term can be absolutely defined so that there is

no room for interpretation. Thus, these definitions and associated criteria provide for some flexibility in their application to an individual event. What may be unusual or exceptional for one part of the country may be typical for another and this variability requires flexibility in national definitions and criteria.

The definitions that follow have in some cases specific numbers included within the definition. Although they are not fully supported by technical studies, they are included as a practical alternative to deleting weakly supported values and, to the extent possible, reflect the comments received during development of this guideline. These numbers may require adjustments as experience is obtained with the guideline.

4.1.1 General Exceptional Event Criteria

Before one can define an individual exceptional event, one must have a general definition of "exceptional." In a sense, this definition also serves as an overriding criterion with regard to the specific definitions presented in 4.1.2.

Webster defines "exceptional" as forming an exception, rare, uncommon, extraordinary, deviating from the norm. With respect to air quality considerations in this guideline, an exceptional event is defined as an event that is not expected to recur routinely at a given location, or that is possibly uncontrollable or unrealistic to control through the SIP process. As noted previously, what is exceptional in one area of the country may not be exceptional in another. Therefore, some judgment is needed in identifying whether an event is exceptional in the area of the country where it has occurred.

4.1.2 Specific Definitions

The following definitions are provided for the purpose of identifying an exceptional event. Some additional discussion is provided in each case to aid in the application of these definitions.

HIGH WINDS (PM)

Definition:

An hourly windspeed of greater than or equal to 30 mph or gusts equal to or greater than 40 mph, with no precipitation^{5,6} or only a trace of precipitation (observed as scattered drops that do not completely wet or cover an exposed area up to a rate of 0.01 inch/hr.⁷).

The high wind condition with no precipitation or only light precipitation and dry soil must be associated with a significant contribution (estimated to be $\geq 85\%$ by weight) of crustal material on the PM sampling medium. High winds without unusually high PM levels due to the suspension or resuspension of crustal material should not be considered an exceptional event. Additionally, fugitive emissions or dust from any part of an industrial source should not be flagged.

STRATOSPHERIC OZONE INTRUSION (O_3)

Definition:

A stratospheric ozone intrusion occurs when a parcel of air originating in the stratosphere, average height 20 km (12.4 mi),⁸ is entrained directly to the surface of the earth.

Although this event is exceptional, the circumstances or the criteria under which it occurs are difficult to measure or document given current

measured meteorological parameters. Stratospheric ozone intrusions are infrequent and very localized events of short duration, which makes it difficult to use currently available airport data to determine whether a stratospheric ozone intrusion has occurred. Stratospheric ozone intrusions are typically associated with strong frontal passages or severe thunderstorms and, thus, may occur primarily during the spring of the year. The above definition is provided only as a general guide for differentiating between stratospheric ozone intrusion, which is an exceptional event for the purpose of flagging data, and other nonexceptional meteorological events. Although data have been identified in the past as being the result of stratospheric ozone intrusion, no standard definition or criteria have been established for concrete identification. Therefore, determining whether a stratospheric ozone intrusion has occurred should be a case-by-case decision based on reasonable judgment regarding the season of the year, time of day, and accompanying meteorological conditions associated with the ozone measurement in question. The EPA concurrence or non-concurrence authority for flagging of ozone data for stratospheric intrusion is the responsibility of OAQPS upon review of the documentation submitted by the State or local agency flagging the ozone data.

VOLCANIC ERUPTIONS (CO, SO₂, NO₂, PM)

Definition:

The emission or ejection of volcanic materials at the Earth's surface from a crater or fissure.⁹

Emissions from volcanic eruptions have a large-scale areawide impact on air quality. Excessive air quality concentrations resulting from volcanic eruptions should be flagged regardless of the frequency of eruptions. In most

cases, however, the eruptions and resulting impact on air quality would be very infrequent.

SANDBLASTING (PM)

Definition:

Sandblasting or gritblasting refers to the temporary use of abrasive blasting with pressurized air for surface preparation purposes at a given location.

Methods currently available are used to control these operations to minimize their impact on air quality at fixed point sources where routine applications are part of the facilities' operations. Ambient air quality levels influenced by these activities should not be flagged. However, completely effective control techniques are not necessarily available or possible for portable sandblasting operations. Therefore, data collected at a site within a micro or middle scale distance from a temporary (generally 3 weeks or less) sandblasting operation may be flagged if all reasonable control measures have been employed to minimize adverse impacts on air quality.

FOREST FIRES (CO, PM)

Definition:

An uncontrolled fire in vegetation or associated flammable material that requires suppressive action to protect natural resources or values associated with natural resources or that is destructive to natural resources.¹⁰

<u>Class</u>	<u>Size, acres</u>	<u>Class</u>	<u>Size, acres</u>
A	<0.25	D	100 - 299
B	0.26 - 9	E	300 - 999
C	10 - 99	F	1000 - 4999
		G	>5000

Some forest fires are unpreventable and because uncontrollable emissions from forest fire can adversely affect air quality concentrations over a large area, forest fires should be considered an exceptional event for the purpose of flagging air quality data. In general, Class A and B fires tend to have a more localized impact; therefore, only data collected at downwind monitors within 3 miles of these type fires should be flagged. For Classes C through G, the impact of the fire is more widespread and the location with respect to the monitor should be supported by receptor^{11,12,13,14} or dispersion modeling.^{15,16}

STRUCTURAL FIRES (CO, PM)

Definition:

Any accidental fire involving some kind of structure. In general, a structural fire involves a building having at least 500 square feet.

The structural fire should be within a micro- or middle-scale distance (up to 500 meters as defined by 40 CFR 58, Appendix D) of a monitor in most instances for the data from that monitor to be flagged. However, a much greater distance may be appropriate for large fires such as a refinery, industrial, or commercial business area fire provided the causal relation is supported by receptor or dispersion modeling.

HIGH POLLEN COUNT (PM)

Definition:

A pollen count index above 25 grains/cm² or 1000 grains per cubic meter.¹⁷

The pollen count index is usually obtained by use of a coated slide mounted on a circular plate that is generally mounted on the top of a seven or eight-story building with an unobstructed air flow. The index is in units of grains of pollen per cm.² Another method of measuring the concentration of pollen is volumetric, i.e., counting the number of grains per cubic meter. Other recognized methods for measuring pollen levels may be used. For a high-pollen count to be flagged as an exceptional event, the pollen count index should be greater than 25, or 1000 grains per cubic meter and the high-volume filters on which the samples were collected should be analyzed microscopically to ensure that significant amounts of pollen (i.e., 50% or greater than the normal pollen count for a typical sample) were collected on the day or days being considered for flagging. Where high pollen is considered to be a problem, State or local agencies should develop procedures for ascribing the effects of high pollen count on filters and should submit them to the respective Regional Office for approval.

CHEMICAL SPILLS AND INDUSTRIAL ACCIDENTS (CO, SO₂, NO₂, PM)

Definition:

Emissions that result from accidents such as fire, explosions, power outages, train derailment, vehicular accidents, or combinations of these.¹⁸

The spill or accident must, of course, not be a routine occurrence. Any of these situations that do occur routinely should be critically evaluated and

stopped. Data from sites that can be unequivocally related to a non-routine accident or spill may be flagged.

UNUSUAL TRAFFIC CONGESTION (CO)

Definition:

A condition resulting from a major accident (rather than frequent minor accidents,) or short-duration obstruction, such as demolition or construction. During these conditions the level of traffic may increase until it exceeds the maximum capacity of a given street or highway. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion. In extreme cases, both speed and volume can drop to zero.¹⁹

As a general rule of thumb, congestion must occur within five hundred meters of a monitoring site (i.e., micro- to middle-scale) and not be a regular occurrence for the data from that site to be flagged.

CONSTRUCTION/DEMOLITION (PM)

Definition:

The building/destroying/renovation of any residential, institutional, commercial, or industrial building (including apartment buildings with more than four dwelling units), structure, facility, or installation that lasts for only a short period of time and is reasonably controlled.

The construction or demolition activity must take place within a reasonable distance of the monitoring site and all reasonable control measures must be

in use before the data from the site can be flagged. Flagged data should be limited to sites classified as micro- or middle-scale (up to 500m) and downwind with respect to the construction activity.

AGRICULTURAL TILLING (PM)

Definition:

The act of preparing dry soil for cultivation or for controlling the growth of weeds by the use of mechanical devices during periods with an hourly average windspeed of greater than 20 mph.

Generally, agricultural tilling operations must occur within a reasonable distance (500 meters) of the monitoring site and tilling must have occurred at the same relative location while the hourly average windspeed is greater than 20 mph for the monitoring data to be flagged. Flagged data must have been collected during or immediately after the day tilling occurred and should be limited to sites which would be classified as micro- or middle-scale with respect to the tilling operations.

HIGHWAY CONSTRUCTION (PM)

Definition:

The act of building a new, or repairing an existing, highway, road or street.

Particulate matter resulting from reasonably controlled highway construction for short time periods may be flagged provided that a microscopic analysis of the filter indicates that 85 percent of material on the filter is related to construction activities and all reasonable control measures have been utilized.

REROUTING OF TRAFFIC (CO)

Definition:

A temporary deviation or detour of vehicular traffic because of an accident, construction, or demolition. The detour must be for no more than 1 week.

The rerouting of traffic should be within a reasonable distance of a monitoring site and last for no more than 1 week for the monitoring data to be flagged. Flagged data should be limited to sites classified as micro- or middle-scale (within 500 meters) with respect to the detour.

SALTING/SANDING OF STREETS (PM)

Definition:

The application of salt and/or sand to the road surface to increase traction and/or prevent the surface water from refreezing after it has melted.

The salting and sanding must occur within a reasonable distance (up to 500 meters) of the monitoring site if the data from the site are to be flagged. Flagged data should be limited to sites classified as micro- or middle-scale with respect to the salting/sanding operations and microscopic examination shows that 85 percent of the material on the filter is salt and/or sand. Data collection is not limited to the date of salting or sanding of the street. All reasonable control measures must be taken to minimize the adverse air quality impact of the salting or sanding operations in order for the data to be flagged. In general this type of data should not be flagged in areas which experience a significant use of salt and/or sand.

INFREQUENT LARGE GATHERINGS (CO, PM)

Definition:

A gathering of more than 10,000 people (5000 cars) at any one time and at a single location. Unusual traffic congestion must be associated with the event.

A large gathering in and of itself without the associated traffic congestion would not qualify as an unusual event for the purpose of flagging. (See discussion of unusual traffic congestion for more details on the criteria for flagging data because of unusual traffic congestion). The event would also be expected to occur less than once per year, and the event should be at a location not regularly used for such purposes. Flagged data should be limited to sites classified as micro- or middle-scale with respect to the gathering.

ROOFING OPERATIONS (PM, SO₂)

Definition:

The process of building, repairing, or recoating the external upper covering of a house or building that involves the application of a petroleum-based material (usually heavy residuals from a refining operation) to a roof. The material is heated and then sprayed or rolled onto the surface. Generally, a roof so covered would be resurfaced or treated no more than once every 3 to 5 years. Unless major damage has occurred, some surfaces would require treatment only every 5 to 10 years.

Roofing operations must occur within a micro-scale distance and upwind of the monitoring site, and all reasonable control measures must be applied for the data to be flagged.

PRESCRIBED BURNING (PM, CO)

Definition:

A controlled fire of vegetative material that is used to improve range lands, agricultural or forestry resources, or associated values.

Prescribed burning is generally a controlled activity that is limited to those days or periods when the meteorological conditions are conducive to good dispersion. Thus, the emissions which affect air quality are dispersed to the extent possible. However, the resulting emissions occasionally adversely affect air quality concentrations over a large area. In areas of the country where prescribed burning is used regularly and extensively for agricultural and/or forestry land management, prescribed burning may not be considered an exceptional event for the purposes of flagging air quality data. Prescribed burning in these areas is usually subject to rules and regulations, including smoke management plans, under which a regulatory agency permits burning after deciding where, and to what extent, the smoke will be allowed to impact air quality.

However, in many areas of the country, prescribed burning for agricultural, forestry land management, or other purposes is an infrequent but necessary activity and may be impractical to fully control. These practices may be considered an exceptional event for the purposes of flagging air quality data.

However, it must be demonstrated through receptor or dispersion modeling, that the burning operations have a substantial impact on the monitored air quality data.

CLEAN UP ACTIVITIES AFTER A MAJOR DISASTER (PM, CO, SO₂)

Definition:

For the purposes of flagging, major disasters are serious public misfortunes for which State or Federal relief has been granted.

PM, CO, SO₂ or other pollutant data affected by and collected during, or for a reasonable period after, the clean up activities following a major disaster may be flagged.

4.2 DEMONSTRATION OF CAUSAL RELATION

Excluding the use of valid air quality data from regulatory purposes is a serious action. Accordingly, a clear demonstration of the relationship between the exceptional event and the measured air quality must be provided. As a minimum, this demonstration should: (a) include all relevant raw data (e.g., air quality data, meteorological data, traffic counts, etc.); (b) show that the monitor did not record high concentrations before and after the period of the exceptional event; (c) show that the local wind direction was such that the monitored pollutant was transported from the exceptional event source to the monitor during the period in question; (d) include as appropriate receptor^{11,12,13,14} or dispersion modeling^{15,16} connecting the monitored concentrations with the exceptional source emissions; (e) include, as appropriate, microscopic filter analyses (for particulate emissions); and (f) include documentation supporting the existence of the exceptional event.

4.3 APPLICATION OF DEFINITIONS AND/OR CRITERIA

As noted earlier, the purpose of this guideline is to provide guidance and direction for flagging air quality data associated with exceptional events and thus promote national consistency in the flagging of such data.

Having established general definitions for the exceptional events and the criteria for applying flags to the data, the State or local agency should consider flagging of any data meeting the criteria of this guideline and prepare adequate evidence to clearly demonstrate the causal relationship between the exceptional event and the flagged data. The flagged data with adequate documentation of the causal relationship should be submitted to the appropriate Regional Office following the procedures outlined in Sections 2.1 and 2.2. The Regional Office, after review, should notify the State or local agency of any disagreements, their reasons for disagreeing, and seek to resolve the conflict. Following their determination (concurrence or non-concurrence), the Regional Offices should notify AIRS and the State or local agency of their action so that the appropriate notation may be made to the AIRS data base and/or the Annual SLAMS Report.

The only exception to this policy is the flagging of stratospheric ozone intrusion. Because of the technical complexity of determining stratospheric ozone intrusion, OAQPS will, upon request by the State or local agency through the Regional Office, either concur or non-concur based on documentation submitted by the requestor.

The criteria (definitions) presented in this guideline will serve as the basis for reviewing determinations associated with exceptional events. If a State or local agency chooses to apply criteria that are less stringent than those contained in the guideline, such recommendation should be subjected

to public review. The recommendation, along with the summary of comments, should then be submitted to the respective Regional Office for review and approval. OAQPS will have final approval authority and, if approval is granted, will include the alternative criteria in a supplement to this national guideline.

4.4 DOCUMENTATION

All decisions regarding the flagging of data because of exceptional events must be documented so that the EPA and the public can review these decisions. The documentation may take several forms. It may include reports from the National Weather Service; a copy of a newspaper clipping or news report indicating that a chemical spill or industrial accident has occurred; a report from the local health department on the pollen count for a given day, supported by filter analyses; special reports prepared by the State or a consultant; or special statistical analyses of the air quality data and other key parameters associated with the event. The actual form of the documentation depends on the event and the extent of publicly available reports or documents that would support the determination of its occurrence. As appropriate, the State or local agency is encouraged to rely on available reports and documentation. When such documentation is not available, the State or local agency must prepare the necessary material sufficient (see Section 4.2) to support its decision regarding the flagged data.

The State or local agency should retain copies of the necessary supporting material or documentation in its offices for review upon request. Copies of this material will have to be available in the record during the public review process and must be provided to EPA for concurrence. It is not intended that a public review process (comment period or public hearing) be conducted

solely for the purpose of determining whether data should or should not be flagged. Instead, the public review process referred to in this guideline refers to the public review process which is otherwise required for regulatory actions taken in accordance with the Clean Air Act. Although the main purpose of the documentation is to support the decision to flag a given piece of data, it also provides air quality analysts with background and supporting information regarding the events associated with the data on which the analyst can rely if and when the data are needed to make a particular air quality decision. The air quality analyst will also be aware of any limitations that should be considered in the use of such data.

APPENDIX
DEVELOPMENT OF CRITERIA FOR EXCEPTIONAL EVENTS

The purpose of this appendix is to summarize the development history of this guideline and to assist users in understanding the information contained herein.

The Standing Air Monitoring Work Group (SAMWG) first addressed the issue of exceptional values and data flagging in December 1981. Subsequent to that time, SAMWG solicited input from EPA Regional Offices and State and local agencies to identify those exceptional events that could have any adverse effect on air quality values measured during their occurrence. The SAMWG also solicited input on how air quality measured during the exceptional event should be flagged. An initial list of possible exceptional events was compiled based on comments by selected Regional Offices and State and local agencies for further consideration.

I. IDENTIFICATION OF EVENTS

In general, the events given further consideration were grouped into three major categories: (1) natural events (meteorological and other natural events), (2) unintentional anthropogenic events, and (3) intentional anthropogenic events. The events within each major category were as follows:

1. Natural Events

(a) Meteorological Events

- o Sustained high windspeeds (PM)
- o Stagnations/inversions (all pollutants)
- o Unusual lack of precipitation (PM)
- o Stratospheric ozone intrusion (O₃)

- (b) Other Natural Events
 - o Volcanic eruption (CO, SO₂, PM)
 - o Forest fires (CO, PM)
 - o High pollen count (PM)
- 2. Unintentional Anthropogenic Events
 - o Large accidental structural fires (CO, PM)
 - o Major traffic congestion due to accident or nonrecurring obstruction (CO)
 - o Chemical spills (SO₂, NO₂, PM, CO)
 - o Industrial accidents (SO₂, NO₂, PM, CO)
- 3. Intentional Anthropogenic Events
 - o Short-term construction/demolition (PM)
 - o Sandblasting (PM)
 - o High-sulfur oil refining (SO₂)
 - o Roofing operations (PM, SO₂)
 - o Salting or sanding of streets (PM)
 - o Infrequent large gatherings (PM, CO)
 - o Soot blowing from ships (PM)
 - o Agricultural tilling (PM)
 - o Prescribed burning (CO, PM)
 - o Noncompliance--point source (CO, SO₂, NO₂, PM)

Those whose comments and suggestions were solicited generally agreed that natural events, other than meteorological events, and unintentional anthropogenic events are, by their very nature, exceptional events. The control of emissions from such events is usually not included in the general control strategy for a given pollutant, although it is sometimes handled as part of an

emergency response action immediately after the event has occurred to minimize possible adverse health impacts on local residents. Reasonable precautions would not guarantee against recurrence or that the air quality would not be affected by these events in the future.

Some disagreement was expressed with regard to intentional anthropogenic events. Some argued that these events occur routinely and the data therefore should not be flagged. Others argued that, although intentional anthropogenic events occur routinely, they are exceptional with respect to normal activities around a particular monitoring site. Still others argued that intentional anthropogenic events can and should be controlled; they further argued that, unless these events or activities occur within the immediate vicinity of a monitoring site, they should not be considered as exceptional and the data collected during their occurrence should not be flagged.

Finally, some strong disagreement was expressed with respect to two meteorological events--stagnations and inversions. Many argue that these two events routinely occur. They further argue that because these events are climatological factors rather than exceptional events, pollutant levels measured during their occurrence should not be flagged.

The list of suggested exceptional events was reviewed and evaluated to determine whether each of the events listed should be considered exceptional and whether other events should be added. The review indicated that this list was comprehensive and that no additional events should be considered at this time.

After considerable discussion over an extended period of time, a general consensus was reached that 15 of the events initially considered for designation did generally satisfy the criteria for defining an exceptional event. Six of the events initially considered (implementing transportation controls,

stagnation/inversions, high-sulfur oil refining, sootblowing from ships, noncompliance--local sources, and unusual lack of precipitation) however, were finally rejected. The rationale for rejecting these events is summarized below.

II. EVENTS NOT CONSIDERED EXCEPTIONAL FOR DATA FLAGGING PURPOSES

1. Implementing Transportation Controls

Transportation control measures are not considered exceptional, and data collected during the implementation of transportation controls should not be flagged. If, however, traffic must be temporarily rerouted during the implementation of the transportation control measures or some congestion occurs due to initial startup of the transportation plan, the data collected at monitors near the rerouted traffic or congestion may be flagged.

2. Stagnations/Inversions

Stagnations and inversions are frequent climatological occurrences that must be considered in evaluating whether a control program is adequate to attain and maintain the NAAQS. An inversion is said to occur at a point, or through a layer, where temperature increases with increasing height.^{20,21} Surface-based inversions are those that extend vertically from the surface to some altitude aloft. One study found that surface-based inversions generally occur about 32 percent of the time.²² They are usually short-lived and disperse shortly after sunrise. Because inversions are expected to occur frequently and are part of weather patterns, they are not considered exceptional events for the purpose of flagging data.

Stagnation episodes are periods of 4 or more days with surface wind speeds of generally 4 m/sec or less and no precipitation or frontal passage. In some

parts of the United States stagnations usually persist for an extended period of time, and they can affect an entire air basin; therefore, they are not generally considered exceptional for the purpose of flagging data.

3. High-Sulfur Oil Refining

High-sulfur oil refining refers to the process of refining crude oil with a sulfur content that is 20 percent or greater than the design capacity of the refining operation. Because this is a common practice at many refineries, and procedures and control methods are used to minimize SO₂ emissions, it is not considered to be an exceptional event for the purpose of flagging data.

4. Sootblowing from Ships

Sootblowing from ships is a method in which air is used to remove deposits that may build up on the walls of the vessel's boiler tubes. This is a common practice that is either controlled or limited (in many areas of the country) by establishing opacity limits. Because these activities are common and steps can be taken to minimize associated emissions, sootblowing from ships (like general sootblowing from utility and industrial boilers) is not considered an exceptional event for the purpose of flagging data.

5. Noncompliance--Local Sources

Limited noncompliance of local sources can be expected from time to time as a result of process upsets or malfunctioning control equipment. These events are usually classified as "upsets" or "malfunctions" as defined by the applicable State or local agency regulations, or they may be considered a violation of applicable emission or opacity limits. If these events are caused by upsets or malfunctions, they should be so noted and reported to the appropriate control agency. If they constitute a violation, the appropriate

legal remedies will be taken. If legal action is taken, the air quality data collected in the vicinity of the source will in all likelihood be used in the legal proceedings, and any appropriate limitations associated with the data would be reviewed and evaluated as part of the legal process. Because data collected during noncompliance conditions have special uses and the source is required to notify the State of the upset or malfunction, noncompliance of local sources is not considered an exceptional event for the purpose of flagging data.

6. Unusual Lack of Precipitation

Lack of precipitation in and of itself would not be considered an exceptional event because it has very little impact on PM air quality levels. Lack of precipitation or drought conditions combined with high winds, however, would be considered an exceptional event. Therefore, unusual lack of precipitation is not considered an exceptional event for the purpose of flagging data.

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16. ABSTRACT This guideline is intended to provide information to State and local air pollution control agencies concerning the flagging of air quality data affected by exceptional events. The guidance defines exceptional events, establishes uniform criteria and procedures for flagging air quality data, and provides a mechanism for allowing consideration of excluding flagged data.		
17. KEY WORDS AND DOCUMENT ANALYSIS		
a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
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APPENDIX C

ADEQ Air Quality Exceptional and Natural Events Policy

0159.000 AIR QUALITY EXCEPTIONAL AND NATURAL EVENTS POLICY

Level One Arizona Department of Environmental Quality

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PURPOSE

This policy sets forth the requirements and procedures that are to be followed in the event of occurrences of air quality exceptional and natural events in Arizona. Information contained herein includes a review of the statutory requirement, definitions of terms used in the policy, brief descriptions of existing U.S. Environmental Protection Agency (EPA) exceptional and natural air quality event policies usable for ADEQ policy development, roles and responsibilities in the air quality regulatory process, and the procedures for determining the occurrence of these events. Attachment A more completely describes EPA exceptional and natural events policies. Attachment B presents the nature of Arizona air quality exceptional events.

AUTHORITY

From §49-424. *Duties of department* 3. By July 1, 1997, establish substantive policy statements for identifying air quality exceptional events that take into consideration this state's unique geological, geographical and climatological conditions and any other unusual circumstances. These substantive policy statements shall be developed with the planning agency certified pursuant to §49-406, subsection A and the county air pollution control department or district.

DEFINITIONS

Air Quality Exceptional Events: These are specific events defined in the EPA Exceptional Events Policy, that are not expected to recur routinely, that cannot reasonably be controlled using the State Implementation Plan (SIP) process, and can be removed from consideration as causing air quality violations upon agreement by EPA.

Air Quality Exceptional Events Stakeholder Group: This group of Arizona-based stakeholders and interested parties met three times during 1997 and 1998 for the express purpose of fulfilling a statutory mandate to draft an ADEQ policy on natural and exceptional air quality events.

Air Quality PM₁₀ Natural Exceptional Events: These are events resulting from the situations defined in the EPA PM₁₀ Natural Events Policy, like wildfires or high winds, that are not expected to recur routinely, and that cannot reasonably be controlled using the State Implementation Plan (SIP) process, but are to be addressed using a Natural Event Action Plan.

Best Available Control Measures (BACM): BACM for PM₁₀ are defined by EPA as techniques that achieve the maximum degree of emissions reduction from a source, as determined on case-by-case basis considering technological and economic feasibility. (59 CFR 42010, August 16, 1994)

Exceptional Events Policy (EEP): This is the oldest applicable policy that has been promulgated by the EPA that addresses extraordinary and/or rare episodes of poor air quality and prescribes a method for identifying the nature and causes of these episodes. It also provides guidance on regulatory responses. The EEP is set forth in the Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (EEP), EPA-450/4-86-007, July 1986. For further discussion of this topic, please see Attachment A.

National Ambient Air Quality Standards (NAAQS): The NAAQS are health-based standards which specify maximum acceptable levels of pollutants in the ambient air. The EPA has established NAAQS for six pollutants designated in the Federal Clean Air Act: carbon monoxide (CO), nitrogen oxides, lead, sulfur dioxides, ozone, and particulate matter (PM₁₀ and PM_{2.5}).

Natural Events Policy (NEP): The Natural Events Policy (NEP) was published in an EPA memorandum entitled Areas Affected by PM₁₀ Natural Events, addressed to EPA Regional Offices' Air Division Directors on May 30, 1996. The NEP identifies natural events which affect PM₁₀ air quality as volcanic/seismic episodes, wildfire, and high winds. The policy represents the EPA's most recent interpretation of the federal Clean Air Act Section 188(f) and Appendix K to 40 CFR, Part 50, and supersedes sections of the EEP. Under this policy, state air agencies can determine through adequate documentation that exceedances are caused by natural events and are therefore to be noted as such in the EPA's Aerometric Information Retrieval System (AIRS) database. For

further discussion of this topic, please see Attachment A.

Natural Events Action Plan (NEAP): This is the plan required under the NEP, which States and localities must formulate and submit to EPA within 18 months of the date of the natural event. As part of the plan, states or localities must accomplish the following:

- Establish public notification/education programs where the NAAQS are exceeded;
- Maintain these programs to minimize public exposure to such events in the future;
- Abate or minimize appropriate contributing controllable sources using BACM (defined above);
- Study, identify, and implement practical mitigating measures as necessary; and
- Re-evaluate conditions on a periodic basis.

State Implementation Plan (SIP): Documents prepared by states and subject to EPA approval; these plans identify the federally-enforceable emissions control and monitoring programs to be undertaken by states to address air pollution within their boundaries.

POLICY

As an outcome of stakeholder sessions held in 1997 and 1998, ADEQ developed this policy to govern the responses by states and localities to the occurrences of air quality natural and exceptional events in Arizona.

RESPONSIBILITY

The following section describes the roles and responsibilities of ADEQ, the County Air Pollution Control Departments or Districts, and the planning agencies certified pursuant to A.R.S. § 49-406.

1. ADEQ and the County Air Pollution Control Departments or Districts shall follow the procedures outlined in the Procedures Section of this Policy to determine whether the EEP or the NEP applies.
2. ADEQ and/or the County Air Pollution Control Departments or Districts shall provide public notice of meetings to present or discuss data or regulatory actions resulting from an exceptional or natural event.
3. ADEQ and/or the County Air Pollution Control Departments or Districts, in their capacity(ies) as the agency(ies) collecting and reporting ambient monitoring data, shall

appropriately flag data in the EPA AIRS database, after a technical demonstration has been made that an exceedance of the relevant NAAQS meets the exceptional or natural exceptional analytical criteria specified in this policy.

4. ADEQ and/or the County Air Pollution Control Departments or Districts shall provide ongoing public health and welfare event notification programs for future natural or exceptional events as practicable.
5. Beginning with Step C in Subsection 3 of the Procedures Section of this Policy, the planning agency(ies) certified pursuant to A.R.S. §49-406 responsible for the area(s) where the monitored exceedance occurred shall contribute such technical and scientific information as available, to assist ADEQ and/or the county air pollution control departments or districts in conducting the analyses.
6. ADEQ and/or the county air pollution control departments or districts shall provide an annual report to a stakeholder group and others, with more frequent updates as needed.

APPLICABILITY

This policy is intended to apply to ADEQ and/or the county air pollution control department or district and to the metropolitan planning organizations certified pursuant to A.R.S. § 49-406 in the event of an occurrence of air quality natural and exceptional events in Arizona and to provide these entities with a clear methodology to follow in addressing the health impacts and causes of these events.

PROCEDURES

The following section describes the methods and procedures to be used by ADEQ to determine the occurrence or non-occurrence of an Arizona air quality exceptional event and to respond to these events.

1. Trigger Mechanism

Initially, analyses to determine whether a possible natural or exceptional event under the EPA policies has occurred is triggered by an exceedance of any of the CO, PM_{2.5}, or PM₁₀ NAAQS shown using scientific and technical evidence to be directly related to wildfire or high winds. ADEQ and/or the county air pollution control departments or districts have responsibility for these analyses. The EPA policies require technical and scientific demonstrations to show that those events were affected by natural sources. These analyses would consist of a reasonable compilation

and explanation of scientific and technical data causing specific exceptional events; for natural exceptional events, they would be based upon air quality modeling and/or other numerical analyses of ambient monitoring data, emission source characteristics and meteorological information. For specific exceptional events, a reasonable explanation of scientific and technical data would include, but not be limited to, event-specific traffic count and/or land use activity data, and news media coverage demonstrating the nature of the event, or a demonstration that the source area for any wind-blown dust event has not been recently disturbed by the activities of humans. Data needed for the natural exceptional event database would be similar to the requirements for SIP modeling applications, and will take into account the form(s) of the NAAQS which were exceeded. The results of these analyses provide the basis for attributing the cause(s) of measured adverse ambient air quality conditions. The data collection and analysis requirements of the EPA policies' will be followed, and ADEQ will also establish technical criteria for the collection and analysis of additional data; these criteria will be used to define, study and provide a policy response for any Arizona air quality exceptional events which might occur.

The technical criteria document will be published by ADEQ within nine months of the effective date of this policy. It will be entitled: Technical Criteria for Determination of Natural Exceptional Events in Arizona. The draft Criteria Document will be available for review by the Arizona Air Quality Exceptional Events Stakeholder Group advising ADEQ on the formulation of this policy. In addition, ADEQ will establish and seek information to complete a database of the following additional data:

- A. Maintenance of spatially and temporally correct soil characteristics and vegetation (plant coverages) inventories across the state;
- B. Collection of precipitation, wind speed, direction, persistence, and gust strength data, as well as meteorological scale circulation maps for regionally similar aerometric monitoring stations across the state;
- C. Definition of synoptic climatology categories and their association with air pollution events across regions of the state;
- D. Ongoing analysis of ambient air pollution data trends for PM_{10} , $PM_{2.5}$ and CO, to ascertain the frequency and magnitude of any exceptional events; and
- E. Continuing collection and analysis of emission estimates and activity levels for emissions of PM and CO from all source categories.

2. Analysis Procedures

When an Arizona air quality exceptional event is observed and verified by ADEQ and/or the County Air Pollution Control Departments or Districts based on analysis of data meeting the technical criteria above, the choice of which of the two applicable EPA policies to be used is governed by the following facts:

- A. CO exceedances caused by emissions from rare or non-recurring exceptional events are relatively straightforward to identify and attribute as affecting an ambient monitor;
- B. CO exceedances caused by rare or non-recurring exceptional events could be excluded from regulation under the EPA EEP;
- C. Most air quality exceptional or natural exceptional events are likely to be limited to PM_{10} , based on the existing monitoring data record;
- D. The characteristics of high wind events in Arizona under the federal NEP are to be defined by the state, based on analysis of meteorological data parameters listed in the federal NEP memorandum and the unique conditions existing in Arizona, in the document entitled Technical Criteria for Determination of Natural Exceptional Events in Arizona;
- E. Elevated emissions of natural and/or well-controlled human-caused sources resulting from high wind events are exempted from additional regulation, except for the requirements of the EPA's NEP;
- F. Wildfire emissions are exempted from regulation, except for the requirements of the EPA's NEP;
- G. In the existing PM_{10} NEP, the EPA has indicated that $PM_{2.5}$ exceedances caused by high winds or wildfire events will probably be treated with a similar policy to be issued some time in the future; and
- H. Policy responses to any future $PM_{2.5}$ exceedances caused by high winds or wildfire will be dealt with on a case-by-case basis, until the EPA NEP is updated.

3. Preparation and Submittal to EPA of a Notice of an Arizona Air Quality Exceptional Event

- A. An exceedance of the numerical level of a CO, $PM_{2.5}$, or PM_{10} NAAQS is observed, and is apparently related to the events described in the federal EEP or NEP, based on technical and scientific evidence.

- B. ADEQ and/or the county air pollution control departments or districts will perform an initial standard data quality review to determine the veracity of the reading.
- C. Within 6 months of the date of the Arizona air quality exceptional event, ADEQ and/or the county air pollution control departments or districts prepares a finding that the EEP or NEP may be applicable.
- D. Based on finding that the exceedance is valid and related to a wildfire or high wind event, ADEQ and/or the county air pollution control departments or districts holds a public meeting in the community near the monitoring site where the exceedance occurred to educate interested members of the public, request additional technical data input, and begin planning process.
- E. Within 18 months of the date of the Arizona air quality exceptional event, ADEQ and/or the county air pollution control departments or districts, in conjunction with the local planning agency(ies) certified pursuant to §49-406 and affected stakeholders, prepares draft Natural Events Action Plan (NEAP) or Exceptional Event data flagging request for review. As part of the NEAP, states or localities must accomplish the following:
 - Establish public notification/education programs where the NAAQS are exceeded;
 - Maintain these programs to minimize public exposure to such events in the future;
 - Abate or minimize appropriate contributing controllable sources using BACM;
 - Study, identify, and implement practical mitigating measures as necessary; and
 - Re-evaluate conditions on a periodic basis.

The NEAP document is presented at a second public meeting, and BACM are adopted as discussed or as needed for human-caused sources.

4. General Procedures for Implementation of NEP and EEP in Arizona

- A. To accomplish this process, ADEQ will define the technical data needed to analyze an Arizona air quality exceptional event in a separate technical criteria document;
- B. ADEQ and the county air pollution control departments or districts shall use the EPA's PM₁₀ Natural Events Policy or Exceptional Events Policy, as the need arises and the technical circumstances of any individual, or groups of,

- Arizona air quality exceptional events are analyzed;
- C. The process specified moves from observation of a NAAQS exceedance(s) and an associated, suspected air quality exceptional event, as defined in the EEP, or a natural exceptional event as defined in the NEP, through an ADEQ and/or the county air pollution control department or district analysis process, culminating in a formal response to the EPA if ADEQ's Arizona air quality exceptional events criteria are met.
 - D. The existing BACM list used by ADEQ is not presumptive, but is a starting point to develop BACM for any NEAP prepared under this policy.

ATTACHMENTS

ATTACHMENT A

Discussion of EPA Policies That Govern Natural and Exceptional Air Quality Events

Exceptional Events Policy (EEP) - The EEP is intended to provide guidance to EPA Regional Offices, and State and local air pollution control agencies concerning the flagging of ambient air quality data affected by exceptional events. The EEP document defines a list of exceptional events categories, establishes uniform criteria and procedures for flagging air quality data, and provides a mechanism for allowing consideration of excluding the use of flagged data from regulatory actions. This policy predates the promulgation of the PM_{10} and $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS, specified earlier in Definitions section), and several of the exceptional events defined in the EEP are now required to be controlled using the SIP control measure development process. These types of events include: construction/demolition, agricultural tilling, highway construction, and salting/sanding of streets.

Natural Events Policy (NEP) - According to the Natural Events Policy (NEP), exceedances will not be construed as causing violations of the federal PM_{10} standards. The NEP gives the states sole discretionary authority for determining natural events that occurred after 1994. The analyses to support this determination must be completed and submitted to the EPA within 180 days of the natural event. The EPA simply reviews the submittal for adequacy of documentation and public process, then adds the appropriate flags to the data in AIRS. The EPA plans to update the NEP in the next few months, to reflect the addition of the $PM_{2.5}$ standards and the revision of the PM_{10} standards in July 1997. The revised NEP will also include an appendix with questions and answers for state air agencies and EPA regional offices on how to use the NEP.

Relationship Between The EEP and The NEP - The EEP still governs exceptional air quality events for all criteria pollutant conditions except those specified in the PM_{10} NEP, for extraordinary and/or rare extreme episodes of pollutants such as Carbon Monoxide (CO), Sulfur Dioxide (SO_2), et cetera. The EEP is a "top-down" approach to data classification and flagging. The EEP requires state and local air agencies to meet EPA Regional Offices' review criteria to flag data as exceptional in nature, and states that these data may or may not remain viable or appropriate for regulatory actions. The EEP clearly states that flagging a data point as exceptional does not presume that the event cannot be regulated through the State Implementation Plan (SIP) process.

In contrast, the present NEP gives the authority for the determination of the occurrence or non-occurrence of a PM_{10} natural event to the state air agency for the three types of events defined in the NEP, and instructs EPA regional office staff not to second-guess the validity of the states' determinations. As specified in the NEP, natural events can only be in an unclassified, attainment, or moderate nonattainment area, with respect to the redesignation or reclassification of that area. The NEP could be used to flag a particular event. This would require a technical analysis to demonstrate that the criteria for "exceptional" conditions occurred and that BACM was in place on all sources with a potential to significantly contribute to the measurement in question. To use the NEP, EPA requires controls on human-caused sources contributing to the PM_{10} natural event to be BACM, applied to the sources contributing to the natural events.

While both the EEP and the NEP are currently applicable, they differ markedly in the process by which an agency collecting monitoring data can flag or denote data as affected by exceptional or natural events. Some knowledge of the 1990 Federal Clean Air Act Amendments and subsequent EPA policies is needed to determine which type of events described in the EEP remain exceptional in nature. Since the NEP was developed after the 1990 Amendments, it specifically deals with EPA air quality planning requirements and policies for PM_{10} . In order for state and local air quality control agencies to comply with the somewhat overlapping and differing analytical and process approaches of these policies, it is necessary to determine those policy(ies) that apply to a given natural or exceptional air pollution event. The method to accomplish this task is described in Subsections 3 and 4 of the Procedures Section of this document.

ATTACHMENT B

Air Pollution Emissions Related to the Unique Geographical, Geological and Climatological Characteristics of Arizona - This section describes characteristics of geography, geology and climatology unique to Arizona likely to cause severe air pollution episodes, which can be classified as natural exceptional, or exceptional events. These types of events are brought on by unexpected acts of nature and/or man. Because the magnitude of these events can vary greatly across the state, (e.g., not all parts of the state experience natural exceptional or exceptional events as a result of the same high wind conditions), the air pollution emissions characteristics of Arizona air quality exceptional events should be examined more closely.

Where air pollution emissions in Arizona substantially or wholly occur as a result of the nature of these geographic, geologic and/or climatological conditions, sufficient controls to reduce these emissions to a safe level may not be available. Air pollution emissions related to these three categories of characteristics are thought to occur intermittently at a low frequency, but can demonstrate substantial episodic ambient air quality impacts, measured as exceedances of the NAAQS. The NAAQS, which set acceptable ambient air quality levels for six (6) air quality indicators, or criteria pollutants, are designed to protect the public health and welfare. The six criteria pollutants are:

- Carbon Monoxide (CO);
- Lead (Pb);
- Nitrogen Dioxide (NO₂);
- Ozone (O₃);
- Particulate Matter (PM) has two separate standards defined in terms of particle size:
 - PM less than or equal to 10 microns in aerodynamic diameter (PM₁₀);
 - PM less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}); and
- Sulfur Dioxide (SO₂).

Of the six criteria pollutants, ADEQ's analysis indicates that substantial natural emissions in Arizona are likely to occur for CO only from uncontrollable wildfires and other rare exceptional events, but more generally for PM₁₀ and PM_{2.5} under high wind conditions or from uncontrolled wildfires as natural exceptional events. Based on the known sources of Pb, NO₂, O₃ or SO₂ in Arizona, natural emissions are zero or so insubstantial as to be undetectable relative to the human-caused sources. For these

reasons, the following descriptions of geographic, geological, and climatological conditions unique to Arizona address only emissions of CO, PM₁₀, and PM_{2.5}.

Arizona Geographic, Geological, and Climatological Factors - Arizona land forms lie in the Basin and Range and Colorado Plateau physiographic province classifications. In general terms, the northeastern 40 percent of the state is the Colorado Plateau, and the remaining 60 percent of the state's land area is defined as Basin and Range. The Mogollon Rim, an escarpment of approximately 1,000 to 1,500 feet of vertical relief defines the boundary between the two province classifications, trending to the west-northwest from the center of the eastern state boundary with New Mexico. Elevations range from more than 11,000 feet above sea level on mountaintops near Flagstaff and in the White Mountains, to the 7,000 foot level of the Colorado Plateau, and descending to the lowest point around 100 feet above sea level near Yuma in the southwestern corner of the state.

The climatology of Arizona is characterized by the potential for extremes, especially of temperature and precipitation. High temperatures above 105° Fahrenheit are common in the low deserts in the summer, and low temperatures near 0° Fahrenheit are common in the high-elevation mountains during the winter months. An entire month can pass without measurable precipitation during the desert summer, while nearly 12 inches of rain have been measured in a 24-hour period in the Sierra Ancha mountain range of central Arizona. Wind conditions in the deserts are generally light and variable, with distinct episodes of increased wind speed when dry cold fronts move through in the spring, or as a result of thunderstorms during the summer monsoon season. Short-term wind events caused by the movement of these monsoon storms can occur as early as late June; an increased probability of these transitory events can persist into mid-September. Wind speeds are higher on average on the Colorado Plateau, but powerful atmospheric inversion or stagnation conditions can persist for several days at a time across all or part of the state.

Characteristics of Sources With Potential Natural CO, PM₁₀, or PM_{2.5} Emissions - As discussed above, uncontrolled wildfires are likely to be the most frequently occurring, but generally rare events with substantial sources of CO, PM₁₀ and PM_{2.5}. Wildfires on public and/or private non-urbanized lands are defined as fires out of a management prescription, and are to be suppressed in a manner which ensures that they be extinguished as expeditiously as practicable. In practice, wildfires can be extinguished using different levels of suppression, taking into consideration factors such as property

and resources at risk, and costs to suppress, for example. All other managed burning activities approved by ADEQ use established regulatory analysis and review processes to ensure that the NAAQS will not be violated as a result of the burn activity. Wildfires have discrete and definable, but moving boundaries, and the effect of their emissions are readily discernable or traceable on ambient PM or CO monitors due to the nature of wildfire behavior and emissions characteristics.

Emissions of PM_{10} and $PM_{2.5}$ caused by high wind events both have the potential to be substantial contributors to exceedances of either or both PM NAAQS. The characteristics of a high wind event are not uniform across all surfaces or source areas. The composition of emissions from high winds is directly related to the local geologic characteristics and the ability of a given horizontal surface to resist the force of the wind, because wind will always cause PM in these two size ranges to be suspended from all surfaces to some degree. The relationship of local geologic characteristics to the observed ambient PM composition is often magnified by human use of land for economic activities such as agriculture, mining, construction, et cetera.

Research on PM emissions in relatively undisturbed desert areas indicates that PM_{10} and $PM_{2.5}$ emissions in those areas are lower than those in ecosystems where human-caused activities disturb the earth. This research indicates that undisturbed desert lands have more stable emission rates of $\leq PM_{10}$ materials, over climatological averaging periods, because this size fraction of PM has been previously removed by nominal wind activity over hundreds or thousands of years. The emission rate of desert lands across a daily or monthly time scale, even with various levels of human-caused disturbance, has been shown to be responsive to various dust control techniques and applications, as well as to natural changes in the frequency and amount of precipitation. The intensity, frequency and duration of high wind events causing PM NAAQS exceedances are relative to the regional topography, pressure gradients in the atmosphere, and the instantaneous PM emission characteristics of the horizontal surfaces. High wind events are relatively rare across regulatory averaging periods, and these events are the proximate cause of the elevated emission rates; for these reasons, quantifiable meteorological data thresholds and measurable surface conditions (i.e., soil types, degree of disturbance, et cetera) are the best tools to provide a scientifically robust method to anchor an Arizona air quality exceptional events policy.

PM NAAQS exceedances caused by high winds in areas with undisturbed

surfaces are expected to recur very infrequently, if at all. However, they are likely to recur more often as the same high winds blow across various disturbed surfaces for sustained periods. Also, in rare cases, significant pollen from plant life can be collected on PM sampler filters, although the diameter of most pollen is greater than PM_{10} . If pollen causes a PM NAAQS exceedance, that event is covered under the EPA Exceptional Events policy. The infrequent and spatially variable nature of Arizona air quality exceptional events creates the opportunity for a shifting list of land use activities and sources to contribute to any given NAAQS exceedance. This situation creates the need for ADEQ to need to seek the broadest possible base of information and data about atmospheric behavior, pollution emissions, and land use activities during the time period before, during, and after particularly adverse wildfire and/or high wind conditions have been observed. This information must be compiled and analyzed to determine whether or not those conditions would warrant application of either of the EPA policies (the EEP or the NEP).

0159.000 Air Quality Exception and Natural Events Policy

Level One Arizona Department of Environmental Quality

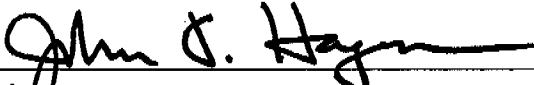
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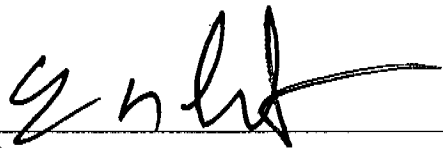
Arizona Department of Environmental Quality:



John F. Hagen
Acting Director, ADEQ

4/28/99

Date



Mark R. Santana
Administrative Counsel
Office of the Administrative Counsel

4/28/99

Date

APPENDIX D

Technical Criteria Document for Determination of Natural Exceptional Events in Arizona

Arizona Department of Environmental Quality (ADEQ)
Technical Criteria Document
for
Determination of Natural Exceptional Events For
Particulate Matter Equal to or Less Than Ten Microns
in Aerodynamic Diameter (PM₁₀)

May 31, 2000

The purpose of this guidance is to provide a tool for Arizona air quality agencies to use in the event of a PM₁₀ exceedance or violation which is believed to have been caused by dust suspended by high winds. Implicitly the Technical Criteria Document addresses the 24-hour form of the PM₁₀ standard, however exceedances of the annual PM₁₀ standard could also be evaluated by these procedures in situations where high wind 24-hour PM₁₀ events are shown to cause the annual standard to be exceeded. This document lays out the steps and decision-making process, that if followed through to completion would result in a request to ADEQ to agree that the PM₁₀ exceedance event is a natural exceptional event under the ADEQ policy. If ADEQ concurs, the request would be forwarded to the EPA as a natural exceptional event. Current EPA policy which was published in a May 30, 1996 memorandum entitled "Areas Affected by PM₁₀ Natural Events", requires this notification to occur within 180 days of the exceedance. Timely notification of a qualified natural exceptional event would result in flagging of the PM₁₀ exceedance values in the EPA AIRS database, and the commencement of a process to develop a Natural Events Action Plan (NEAP) by the Arizona agencies working with stakeholders in order to minimize the effects of any future natural exceptional events, per the ADEQ and EPA policies. The NEAP must be in place within 18 months of the exceedance.

In the case of an exceedance that did not cause a violation of a PM₁₀ standard, the technical process described in steps 1-3 below could also be followed in order to determine whether the event qualifies as a natural exceptional event. This would provide valuable information for planning purposes and for deciding whether to proceed with data flagging and NEAP development or simply to change sampling frequency. On the other hand, if the exceedance caused a PM₁₀ violation it would be necessary to complete steps 1-3, and to file notification to EPA and to implement a NEAP in order to avoid an EPA action on the attainment status of the area in question. Documentation showing compliance with the requirements of Steps 1-3 is required, and completeness in meeting these documentation requirements will be judged by ADEQ.

Step 1) Have the measured PM values been properly qualified and validated?

In this step, information about the measurements, the monitoring site(s), the area around the site(s), the sampler(s), quality control, and quality assurance must be documented. A description of each site location, the operational history and data summary for all PM₁₀ monitoring conducted at that site, including the exceedance and/or violation values, and a description of emissions sources and their activity levels in the area must be provided. For reporting the PM₁₀

data, including the exceedance and/or violation values, the requirements of 40 Code of Federal Regulations (CFR), Part 50.6 and 40 CFR, Part 50, Appendix K must be referenced and followed. For the site(s) of interest, this descriptive information should address the information and requirements described in 40 CFR, Part 58.26, including relevant appendices.

Documentation must be provided to show that the instrument(s) and/or sampler(s) measuring a PM_{10} exceedance or violation is an EPA Reference or Equivalent Method, per the requirements of 40 CFR, Part 50, Appendix J, and Part 58.11, referencing Appendix C. For each site location, compliance with monitoring siting objectives, probe siting and installation, and operating schedule requirements must be described following 40 CFR, Parts 58.12 and 58.13, and 40 CFR, Part 58, Appendices D and E. Compliance with quality control and quality assurance requirements of 40 CFR, Part 58.10 and 40 CFR, Part 58, Appendix A for each PM_{10} sampler of interest must also be documented, specifically addressing the history of calibrations, routine checks and maintenance, and whether the monitor received and passed a post exceedance flow rate performance audit.

Step 2) Does the event meet the "exceptional" II tests

In this step a demonstration must be made that the weather conditions during the PM_{10} exceedance meet the "exceptional" criteria for the geographic area where the exceedance occurred. The criteria for the tests for qualification of an exceptional event were developed by climatological experts at the University of Arizona Department of Geography. The researchers studied the geological, geographic, and climatological conditions related to PM_{10} measurements caused by high winds throughout the state. The results of their work is summarized below and described in full detail in the report titled Climatological Analysis for PM_{10} Natural Exceptional Events in Arizona, May 2000, which is available at ADEQ.

Prior research has shown that high wind speeds especially when coupled with drought conditions and low soil moisture have caused dust storms in the southwest United States. A portable wind tunnel was used by ADEQ contractors in 1989 to estimate wind erosion at various wind speeds over different soils in Arizona; Nickling, W.G. and Gillies, J.A. 1989, Emission of Fine Grained Particulates from Desert Soils. Their investigations found disturbed desert soils became suspended at about 7.0 meters per second (15.7 miles per hour). Subsequent hour-by-hour measurements of PM_{10} and wind by ADEQ at various locations have substantiated this finding. This information was given to the natural exceptional events researchers for incorporation in the qualification criteria.

The natural exceptional events research team performed statistical tests using historical Arizona PM_{10} measurements and available weather data. Consideration of the strength of statistical relationships and the availability of data to users of this guideline led to the decision that wind speed and precipitation were the key factors influencing blowing dust (PM_{10}). Consistent with EPA policy, wind speed was selected as the principle factor in identification of an exceptional event while short-term and long-term precipitation were assigned secondary weights.

Having established the relationship between climate conditions and windblown PM_{10} the next

step is to answer the question of what constitutes an "exceptional" event. ADEQ advised the researchers that an incident rate of approximately 99.9th percentile or 1 event in a 3-year return period should be used for the meteorological condition, or combination of conditions to qualify a meteorological event as "exceptional".

In general, it was found that a prerequisite for a PM_{10} event to be declared exceptional is that at least 3 hours of wind be greater than 7.0 meters per second (15.7 miles per hour) which is the approximate threshold for suspension of fine soil into the air. If this condition is met then the event is reviewed by two sequential decision paths. On the first decision path the event can be deemed "exceptional" if the 24-hour average wind speed during the PM_{10} measurement exceeds the once in 3 year statistic. However, if wind speed during the event was less than the 99.9th percentile speed but equal to or higher than the 97th percentile value then the second decision path is followed which includes precipitation tests. These steps are outlined in Figure I.

The following is a description of the data requirements and criteria for testing a potential PM_{10} exceedance as a natural exceptional event. It is important to note that the numbered criteria are to be addressed sequentially.

Weather Data Requirements

The process for selection of the weather data source(s) to evaluate a candidate natural exceptional PM_{10} event are described below and outlined in Figure 2. The critical consideration or selection of weather stations among eligible sources of data is their ability to represent the conditions that occurred at the location of the PM_{10} monitor during the exceedance.

The station locations for wind speed and precipitation used to establish the event criteria (standard stations) are shown on maps in Figures 3 and 4, respectively. Tables 1 and 2 contain the latitude/longitude of each station along with critical climatological statistics. Alternative data sources are recommended provided that the alternative site(s) better represents the physical environment at the PM_{10} monitoring site, considering elevation, topography, and proximity. Alternative sites must have documented quality control/assurance and maintenance program and records to assure comparable quality to the standard stations. If the alternative station has a reliable and complete record of 10 years or more, that data must be used to compute long-term statistics for the criteria tests. The choice of an alternative site and decisions on the use of the data must be coordinated with ADEQ before completing the criteria tests below.

Sequential Criteria Tests

Criterion #1: Were there 3 or more hours during the PM_{10} exceedance with hourly averaged wind speeds equal to or greater than 7.0 meters per second (15.7 miles per hour)?

If criterion #1 is met, proceed to criterion #2, if not, the event does not qualify as an "exceptional" event.

Criterion #2: Was the 24-hour average wind speed on the day of the PM_{10} event equal to or greater than the 99.9th percentile level (one occurrence in 3 years) wind speed for the geographic area?

This is answered by comparing the actual 24-hour wind speed measured at the most representative standard station from Figure 3 and Table 1 during the event, with the 99.9th percentile value for that station in Table 1. If an alternative station is used, the 24-hour average wind speed during the event from that station is compared to the long term 99.9th percentile value calculated for that station, when available.. If the data record for the alternative station is insufficient for long-term statistics, i.e. less than 10 years, the 24-hour average wind speed measured at the alternative station during the event is compared to the 99.9th percentile value on Figure 5 for the geographic location of the alternative station.

If the wind speed during the event was equal to or greater than the 99.9th percentile value, it qualifies as an exceptional event. If the wind speed during the event was less than the 99.9th percentile value, proceed to criterion #3.

Criterion #3: Was the 24-hour average wind speed on the day of the PM_{10} event equal to or greater than the 97th percentile level (10 occurrences per year) for the geographic area?

This is answered by comparing the actual 24-hour wind speed measured at the most representative standard station from Figure 3 and Table 1, during the event, with the 97th percentile value taken from that same wind station in Table 1. If an alternative station is used, the 24-hour wind speed average during the event is compared to the long term 97th percentile value for that station, when available. If the data record for the alternative station is insufficient for long-term statistics, i.e. less than a 10 year record, then the 24-hour wind speed average measured at the alternative station during the event is compared to the 97th percentile value on Figure 6 for the geographic location of the alternative station. If greater detail than provided on Figure 6 is needed, ADEQ can furnish gridded values for the area in question.

If the wind speed during the event was equal to or greater than the 97th percentile value, proceed to criterion #4. If the wind speed was less than the 97th percentile value, the event does not qualify as an "exceptional" event.

Criterion #4: Have there been dry conditions during the 60 days prior to the PM_{10} exceedance such that the 60-day cumulative precipitation is lower than the 4th percentile value from long-term statistics?

This is answered by comparing the cumulative precipitation measured during the 60 days prior to the PM_{10} event at the most representative standard precipitation station in Figure 4 and Table 2 with the long-term 4th percentile value for that station in Table 2. If an alternative station is being used, the

60-day cumulative precipitation amount measured at that station during the PM_{10} event are compared to the long-term 4th percentile 60-day precipitation value calculated for that station. If the data record for the alternative station is insufficient for long-term statistics, i.e. less than a 10-year record, then the precipitation measured at the alternative station for the 60 days prior to the exceedance is compared to the 60-day average long-term 4th percentile value on

Figure 7 for the geographic area of the alternative station. If greater detail than provided on Figure 7 is needed, ADEQ can furnish gridded values for the area in question. If this criterion is met, the PM_{10} event qualifies as an exceptional event met, proceed to Criterion #5.

Criterion #5: Have there been dry conditions during the previous winter (October-March) such that the cumulative precipitation is lower than the 4th percentile value from long-term statistics?

This is answered by comparing the cumulative precipitation for the October-March period prior to the PM_{10} event at the most representative standard precipitation station in Figure 4 and Table 2 with the long-term 4th percentile value for October-March precipitation at that station from

Table 2. Note that if the PM_{10} exceedance occurred in the October-March time frame that the preceding October-March precipitation data are used. If an alternative station is being used, the cumulative precipitation amount measured at that station during the October-March period prior to the PM_{10} event is compared to the 4th percentile long-term value calculated for that station. If the data record for the alternative station is insufficient for long-term statistics, i.e. less than a 10- year record, then the precipitation measured at the alternative station for the October-March period prior to the PM_{10} event is compared to the long-term October-March 4th percentile values on Figure 8 for the geographic location of the alternative station.

If greater detail than provided on Figure 8 is needed, ADEQ can furnish gridded values for the area in question.

If this criterion is met, the PM_{10} event qualifies as an "exceptional" event. If this criterion is not met, the event does not qualify as an "exceptional" event.

Step 3) What were the sources of the emissions causing the exceedance, i.e., were the exceedances caused by dust suspended by high winds?

Initially this step entails the development of a modeling plan for inclusion in the notification to EPA of the occurrence of the natural exceptional event within 180 days of the PM_{10} violation or exceedance. This plan should provide a preliminary discussion of conditions during the exceedance, particularly the suspected source categories of windblown PM_{10} on the day of the exceedance. The modeling plan should describe in as much detail as possible the approximate dimensions of the modeling domain, emission inventory construction methods, sources of meteorological data, and the types of models to be used. The actual modeling analysis must be coordinated with ADEQ during the development and execution stages and be included in the NEAP public review process. The final modeling analysis is to be submitted with the NEAP within 18 months of the exceedance.

A logical starting point for evaluating the sources contributing to the PM exceedance would be a mapping of all PM sources significantly influencing the monitor(s) in question on the day of the event. The size of the inventory area will depend on the types of sources and their proximity to the monitor(s). A monitor with large areas of recently disturbed light, desert soils in the

Figure 1. Sequential Criteria Tests for PM_{10} Natural Exceptional Events

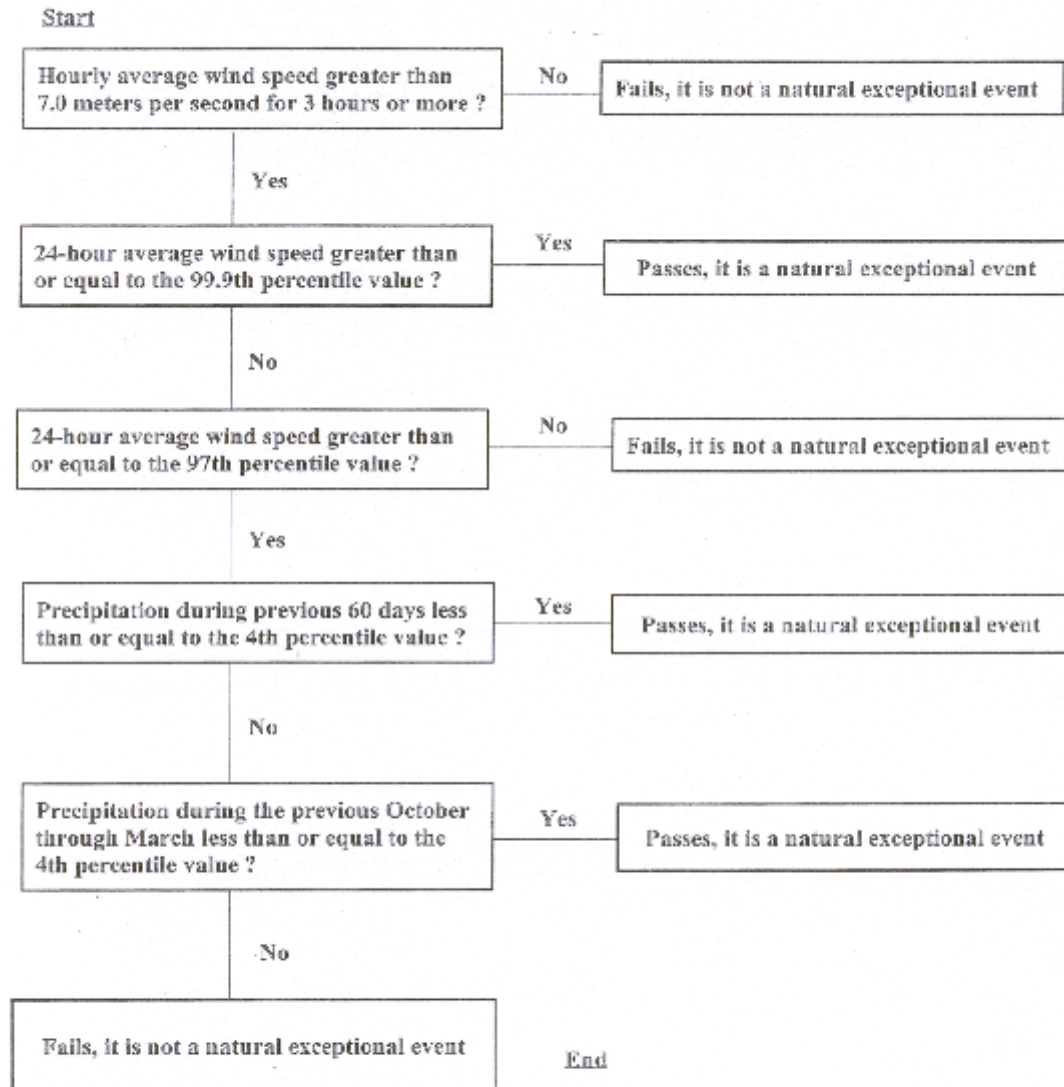
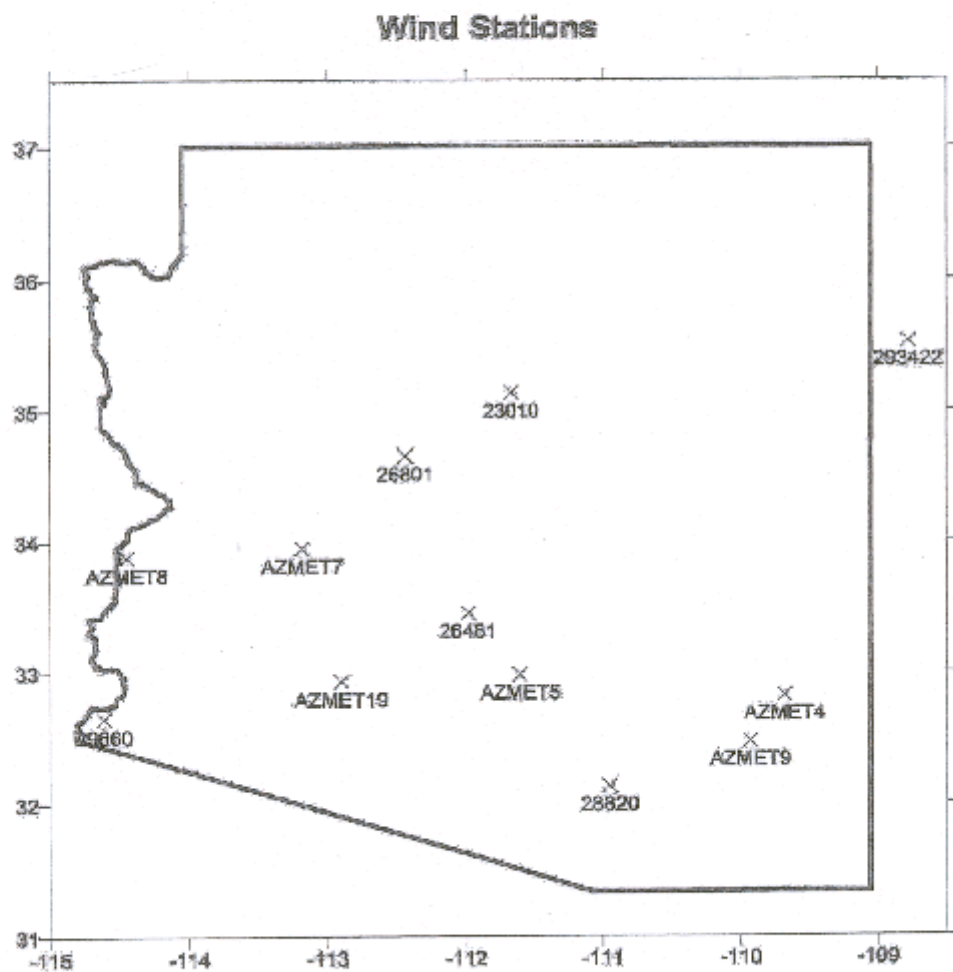


Figure 2. Weather Data Requirements for PM₁₀ Natural Exceptional Events

First, for wind speed and precipitation, determine and document which weather station is most representative of the site where the PM₁₀ exceedance value was measured. Depending on whether a "standard" station listed in Tables 1 and 2, or an "alternative" station is selected, go to the "standard" station option, below, or the "alternate" station options, below, respectively.

	Day of Exceedance Value	Lookup Value
<u>"Standard" Station Wind Speed and Precipitation Data Values</u>	X	X
<u>There are 3 options for use of an "Alternate" Station in lieu of a "Standard" Station</u>		
1) Alternate Wind Speed and Precipitation Station, demonstrated to be more representative of PM ₁₀ exceedance site, have more than a 10-year period of record, and be quality-assured.	X	X
or		
2) Alternate Wind Speed and Precipitation Station, demonstrated to be more representative of PM ₁₀ exceedance site, have less than a 10-year period of record, and be quality-assured.	X	Use standard station default values
or		
3) Alternate Wind Speed and Precipitation Station, demonstrated to be more representative of PM ₁₀ exceedance site, have less than a 10-year period of record, and be quality-assured.	X	Use interpolated grid values available from ADEQ

Figure 3. Standard Climatological Station Map for Wind Speed



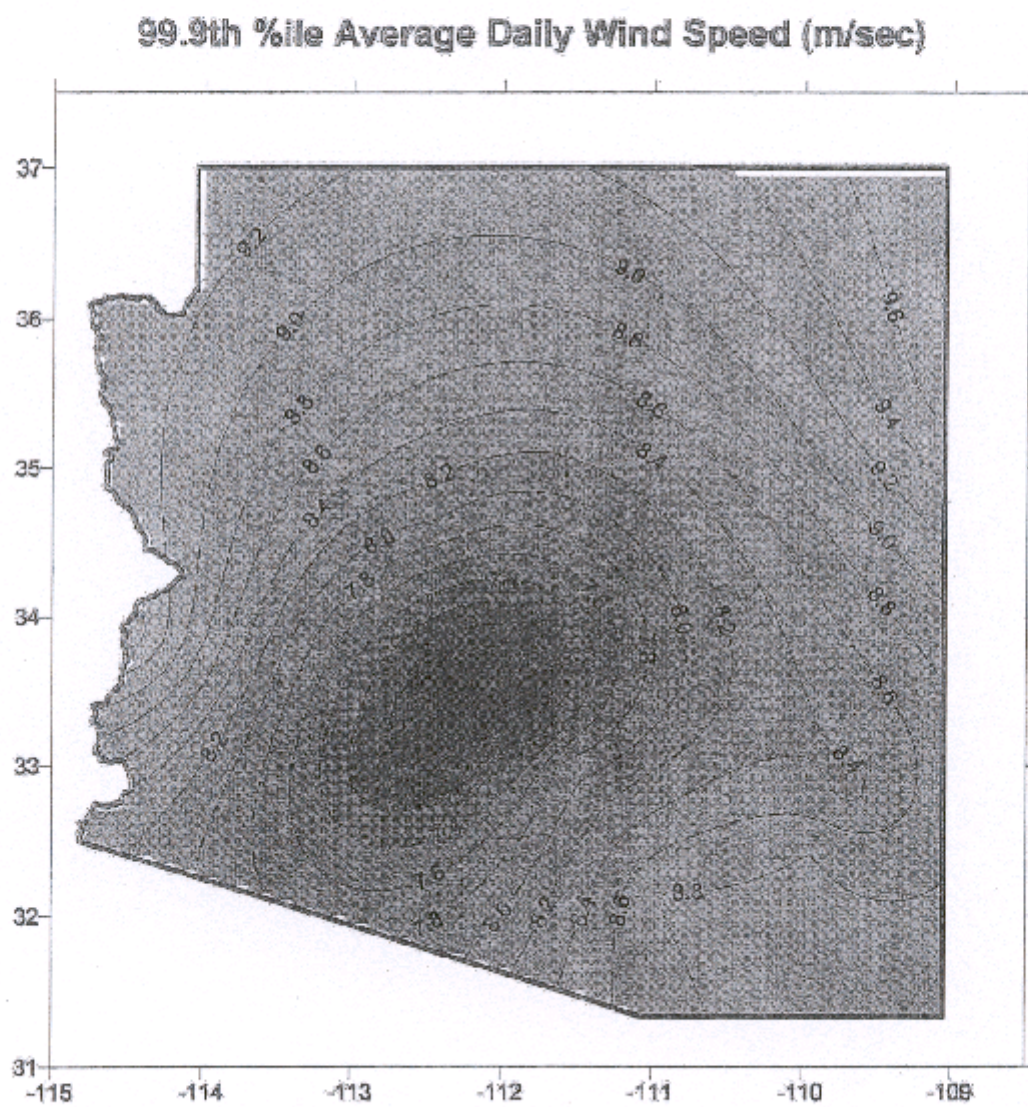
BAFOMA	VZMEL18	35.99	-143.9	548	4.9	1.1
BOICLY	VZMEL18	35.71	-108.89	4340	2.3	8.8
BARKER	VZMEL18	33.99	-144.42	84	0.8	0.2
ALBUCA	VZMEL18	33.99	-143.18	622	2.3	3.8
COOLIDGE	VZMEL18	35.99	-144.8	433	4.8	1.8
SAFFORD	VZMEL18	35.93	-108.88	804	2.2	8.8
GALLUP	38935	32.23	-108.18	481	0.8	8.8
YUMA NCAS	38880	32.99	-144.45	82	0.8	8.8
TUCSON INTERNATIONAL AP	38850	32.13	-140.07	11	0.1	8.8
PRESCOTT LOVE FIELD	38801	34.82	-113.43	420	2.8	8.8
PHOENIX SKY HARBOR INTL AP	38484	33.48	-111.88	381	4.8	0.2
PHOENIX RAYMOND AP	38010	33.18	-111.18	532	2.8	8.8
LOCATION	ID	LAT	LONG	LEV (m)	SLP (mb)	SEA (mb)

Table 1. Station Periods and Lookup Values
 Designated Climate Stations Used for Average Daily Wind Speed

Table 2. Standard Climatological Stations Used for Precipitation Return Periods and Lookup Values

LOCATION	ID	LAT	LONG	LEV (m)	60 day (mm)	Prev. winter (mm)
AJO	20050	32.37	-112.87	537	0	19
ALPINE	20159	33.85	-109.13	2454	12	94
ARIVACA	20380	31.57	-111.34	1103	1	68
ASHURST HAYDEN DAM	20498	33.10	-111.25	499	0	57
BARTLETT DAM	20532	33.82	-111.53	503	0	81
BEAVER CREEK RANGER STATION	20670	34.67	-111.72	1164	6	113
BOUSE	20849	33.94	-114.02	282	0	10
CANELO	21231	36.15	-109.53	1522	3	37
CANYON DE CHELLY	21248	31.55	-109.53	94	3	57
CASA GRANDE NATIONAL MONUMENT	21314	33.00	-111.53	433	0	51
CHANDLER HEIGHTS	21514	33.22	-111.68	442	0	62
CHEVELON RANGER STATION	21574	34.55	-110.92	2135	9	101
CHILDS	21614	34.35	-111.7	808	5	93
CHIRICAHUA NATIONAL MONUMENT	21884	32.00	-109.35	1615	3	85
CORDES	22109	34.30	-112.17	1149	2	67
DOUGLAS BISBEE AIRPORT	22884	31.47	-109.6	1249	1	35
DUNCAN	22754	32.75	-109.12	1116	2	55
EHRENBERG	22790	33.58	-114.42	143	0	7
FLAGSTAFF AIRPORT	23010	35.13	-111.67	2135	11	134
FORT THOMAS	23160	33.02	-110	853	2	50
FORT VALLEY	23160	35.27	-111.73	2239	12	124
GILA BEND	23383	32.95	-112.72	226	0	17
GISELA	23448	34.12	-111.28	884	4	103
GLOBE	23505	33.38	-110.78	1080	4	117
GRAND CANYON NATL PARK	23596	36.05	-112.13	2101	6	91
HOLBROOK	24089	34.90	-110.17	1545	0	34
HORSESHOE DAM	24182	33.88	-111.72	618	0	86
IRVING	24391	34.40	-111.62	1159	5	127
LAVEEN	24829	33.33	-112.15	340	0	26
MESA	25467	33.42	-111.82	376	0	39
MIAMI	25512	33.40	-110.87	1085	2	126
ORACLE	26119	32.50	-110.73	1385	7	158
ORGAN PIPE CACTUS NATL MONUMEN	26132	31.93	-112.78	511	0	42
PAGE	26180	36.92	-111.45	1302	3	28
PARKER	26250	34.22	-114.22	125	0	12
PHOENIX SKY HARBOR	26481	33.44	-111.99	337	0	35
PINETOP FISH HATCHERY	26601	34.12	-109.92	2195	14	161
PLEASANT VALLEY RANGER STATION	26653	34.10	-110.93	1540	6	136
PRESCOTT	26796	34.55	-112.45	1650	6	85
ROOSEVELT	27281	33.67	-111.15	672	1	71
RUCKER CANYON	27334	31.75	-109.42	1637	4	57
SAFFORD AGRICULTURE CENTER	27390	32.82	-109.58	900	2	45
SAN CARLOS RESERVOIR	27480	33.18	-110.53	772	1	104
SAN MANUEL	27530	32.62	-110.85	1086	2	75
SANTA RITA EXPERIMENT RANGE	27593	31.77	-110.85	1311	4	109
SEDONA RANGER STATION	27708	34.87	-111.77	1285	5	116
SNOWFLAKE	28012	34.50	-110.08	1720	6	50
SOUTH PHOENIX	28112	33.38	-112.07	354	0	33
SPRINGERVILLE	28162	34.13	-109.28	2145	3	41
STEWART MOUNTAIN	28214	33.55	-111.53	433	1	75
SUPERIOR	28348	33.30	-111.1	915	2	137
TEMPE	28499	33.42	-111.93	357	0	42
TOMBSTONE	28619	31.70	-110.05	1405	2	55
TUCSON UNIVERSITY OF ARIZONA	28817	32.23	-110.95	738	1	44
TUCSON INTERNATIONAL AIRPORT	28820	32.13	-110.93	756	2	51
TUMACACORI NATL MONUMENT	28835	31.57	-111.05	996	1	83
WALNUT CREEK	29158	34.93	-112.82	1551	4	79
WICKENBURG	29287	33.97	-112.73	631	0	54
WILCOX	29334	32.25	-109.83	1281	3	41
WILLIAMS	29359	35.25	-112.18	2057	11	105
WINSLOW MUNICIPAL AIRPORT	29439	35.02	-110.73	1489	3	39
WUPATKI NATL MONUMENT	29542	35.52	-111.37	1456	1	28
YUCCA	29645	34.88	-114.13	594	0	33
YUMA CITRUS STATION	29652	32.82	-114.65	58	0	7
YUMA PROVING GROUND	29654	32.83	-114.4	99	0	5

Figure 5. 99.9th Percentile Average Daily Wind Speed Map



immediate vicinity would likely be swamped by local emissions which would dictate a relatively small inventory area. Historically high wind PM_{10} exceedances have all been attributable to disturbed land in the immediate vicinity of the monitor. Regional or background PM_{10} levels are typically elevated and the windblown component may need to be considered; that may significantly increase the complexity of this technical analysis and the NEAP planning process.

The emissions inventory will be needed for the present modeling evaluation, and also later in the process if a NEAP is developed, to apply Best Available Control Measures (BACM), as currently defined by EPA for the appropriate sources.

An atmospheric dispersion model approved by EPA in their Guideline on Air Quality Models or alternative modeling tool approved by ADEQ must be used to assess the episode using the inventory and representative meteorology. Absolute agreement between modeled PM_{10} and the actual measurements are less important than the relative contributions of the sources because the purpose of the modeling is to show that the exceedance was caused by windblown PM_{10} . In other words, that the exceedance would not have occurred without the windblown PM_{10} .

The dispersion modeling results should be evaluated and compared with information gained by analysis of the PM filter for chemical composition, particle size distribution, and physical characteristics to interpret the contributions of the different PM sources and for comparison and reconciliation with the dispersion modeling results.

Step 4) If the PM_{10} event qualifies as a natural exceptional event, what are the required contents for notification to ADEQ and EPA ?

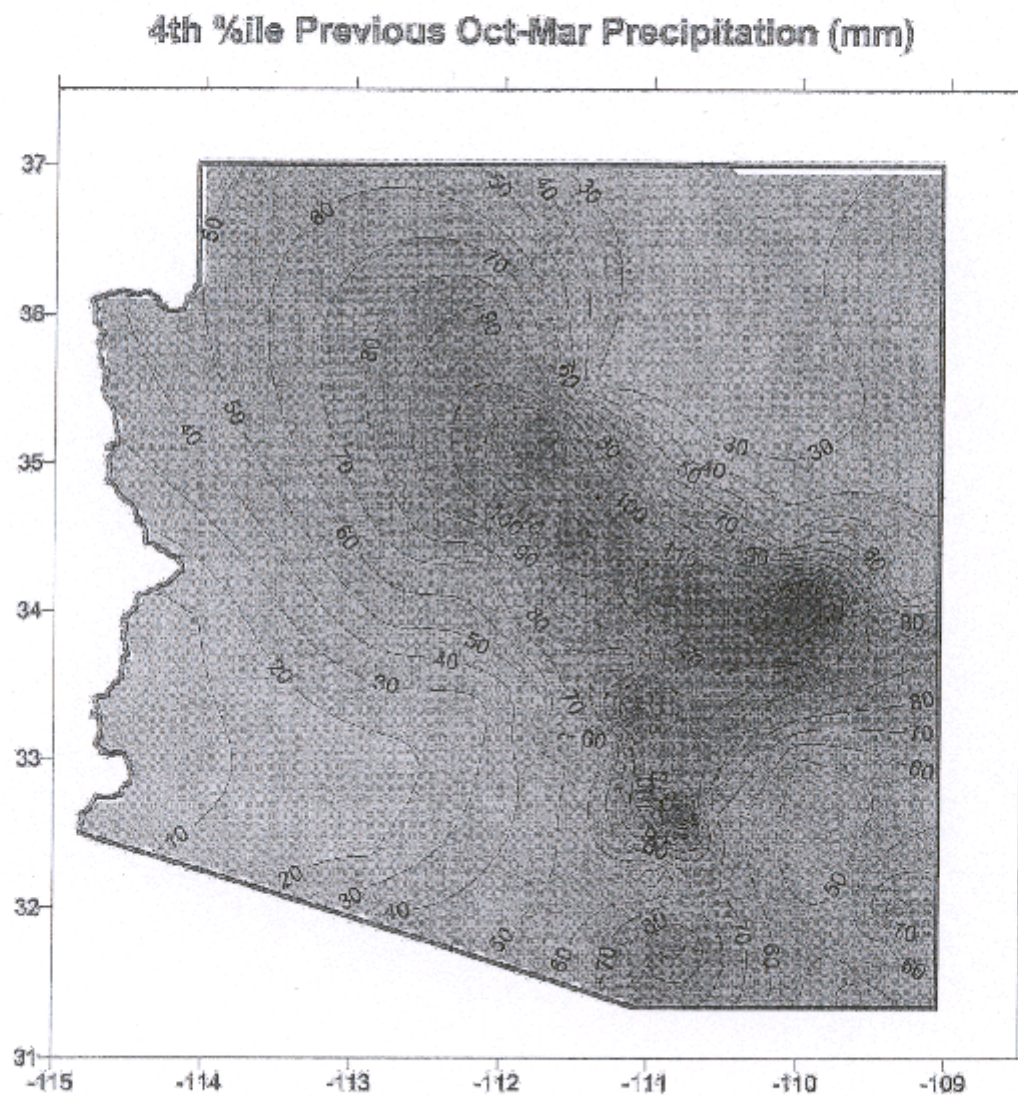
EPA requires the notification that a PM_{10} exceedance is a natural exceptional event within 180 days of the violation or exceedance measurement, along with a plan to develop a NEAP for later submittal within 18 months of the exceedance date. This notification must include the following components from steps 1-3 above.

From Step 1: Provide complete documentation that the PM_{10} sampler(s) was collecting valid samples on the day of the exceedance. Provide similar documentation that sample handling, laboratory work, quality control and quality assurance, and calculations were properly conducted.

From Step 2: Provide complete documentation of all data, assumptions and calculations made to qualify the PM_{10} exceedance as an exceptional event.

From Step 3: Provide a modeling plan describing in as much detail as possible the tools and methods that will be used to determine the relative contributions of windblown PM_{10} sources during the PM_{10} exceedance for subsequent use in the final NEAP. A preliminary assessment of the contributing windblown PM_{10} sources should also be included.

Figure 8. 4th Percentile Previous October - March Cumulative Precipitation Map



In addition, the notification to EPA through ADEQ must include a process and time line to develop a NEAP for public notification of potential PM_{10} exceedances caused by natural exceptional events, and a plan to adopt Best Available Control Measures (BACM) on the manmade portions of the source(s) of windblown dust to be identified in the modeling to be performed pursuant to the plan from Step 3. The requirements for NEAP content and review are to follow current EPA and ADEQ policies or other guidance. All of the documentation described here in Step 4 must be submitted to the ADEQ Director under a cover letter requesting that ADEQ analyze and process the request, make recommendations, and forward the request to EPA.

References

United States Environmental Protection Agency (USEPA). May 30, 1996. Areas Affected by PM_{10} Natural Events, USEPA policy memorandum. -

Arizona Department of Environmental Quality. April 28, 1999. Air Quality Exceptional and Natural Events Policy, Level One, Number 0159.000.

USEPA 40 Code of Federal Regulations (CFR), Part 50.6

USEPA 40 CFR, Part 50, Appendix I.

USEPA 40 CFR, Part 50, Appendix K.

USEPA 40 CFR, Part 58.10.

USEPA 40 CFR, Part 58.11

USEPA 40 CFR, Part 58.12.

USEPA 40 CFR, Part 58.13

USEPA 40 CFR, Part 58.26.

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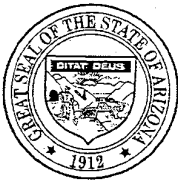
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APPENDIX E

**ADEQ April 7, 2003 Letter to EPA Region IX Requesting
Flagging of Aug 18, 2002 Exceedance**



Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
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Stephen A. Owens
Director

April 7, 2003

Mr. Jack P. Broadbent, Director
Air Division
EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901

Re: Yuma PM₁₀ Nonattainment Area 2002 Exceedance

Dear Mr. Broadbent:

The purpose of this letter is to request EPA's review of the circumstances regarding an unusual thunderstorm on August 18, 2002, that developed in Mexico and moved through the Yuma area, resulting in a PM₁₀ exceedance in the Yuma nonattainment area. Because of the unusual nature of the exceedance, the Arizona Department of Environmental Quality (ADEQ) is requesting it be flagged in the AIRs database. Other than the August 18, 2002, exceedance, the area has measured PM₁₀ concentrations below both the annual and 24 hour National Ambient Air Quality Standards (NAAQS) consistently since 1992. ADEQ is currently working with the stakeholders to develop a maintenance plan, to be submitted to EPA later this year. We intend to include information in the Plan regarding the August 18, 2002, event as provided under Section 179B of the Clean Air Act.

The nature of the thunderstorm is described in Enclosure 1. On August 18, 2002, there was an unusually large and intense thunderstorm over east-central Sonora that moved northwesterly through Yuma. Radar reports indicated rainfall amounts over 1.5 inches in some areas. At 9:30 p.m. the leading edge of the storm passed over the Yuma area, producing sustained winds in excess of 25 miles per hour with gusts up to 45 miles per hour. For the day, there were over 16 hours that had average wind speeds over 15 mph. The Enclosure also includes a summary of the 24-hour monitored readings along the Arizona/Mexico border for the day, showing that other places in the path of the storm also experienced very high readings. Although Yuma's monitor was at 170 ug/m³, Imperial Valley had concentrations that were almost 300 ug/m³ and monitoring sites in Baja California reported PM₁₀ in the 300-600 ug/m³ range. Enclosures 2 and 3 include specific data from various sites throughout the area for that day. Please note the data for the Ethel Street monitor in Calexico, Imperial County, California has been flagged as qualifying as an exceptional event qualifier.

Northern Regional Office
1515 East Cedar Avenue • Suite F • Flagstaff, AZ 86004
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

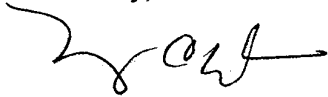
Printed on recycled paper

Mr. Jack P. Broadbent
April 7, 2003
Page 2

As ADEQ moves forward to develop the maintenance plan, we and the Yuma stakeholders are committed to ensuring the air quality progress made through the years will be sustained with appropriate control strategies in place. We welcome and encourage Colleen McKaughan's participation, as EPA's Arizona liaison, as we try to develop an approvable plan that will allow EPA to move forward with the redesignation of the area to attainment.

If you have any questions regarding this request, please contact me at (602) 771-2308.

Sincerely,

A handwritten signature in black ink, appearing to read 'N. Wrona', with a stylized flourish at the end.

Nancy C. Wrona, Director
Air Quality Division

Enclosures (3)

cc: Colleen McKaughan w/enclosures

High Particulates (PM₁₀) Concentrations in Yuma on August 18, 2002

Summary

An unusually large and intense thunderstorm developed in east-central Sonora on the afternoon of August 18, 2002. By evening the thunderstorm had moved to the northwest through Yuma, producing sustained winds in excess of 25 miles per hour with gusts up to 45 miles per hour. Wind speeds of 15 miles per hour and greater can suspend surface soil dust (a type of particulate) into the air.

Due to the high wind speeds, elevated concentrations of particulates 10 microns and smaller (PM₁₀) were experienced in Yuma. The 24-hour average of PM₁₀ was 170 $\mu\text{g}/\text{m}^3$ (μg = cubic meter and m^3 =micrograms) on August 18, 2002. Acceptable air quality standards are 50 $\mu\text{g}/\text{m}^3$ for an annual average and 150 $\mu\text{g}/\text{m}^3$ as a 24-hour average.

In the Imperial Valley and Baja California, the average PM₁₀ concentration had values two to four times higher than experienced in Yuma. Other monitoring sites in the vicinity showed elevated concentrations as high as 700 $\mu\text{g}/\text{m}^3$ on a 24-hour basis.

The Yuma PM₁₀ sample on the day of this storm event exceeded the PM₁₀ 24-hour standard. Yet, given the occurrence of major dust storms and the one-day-in-six sampling frequency, dust storms rarely produce violations of the PM₁₀ standards.

Weather on August 18, 2002

During the early afternoon of August 18, 2002, large thunderstorms developed over western Chihuahua and eastern Sonora, Mexico in the moist and unstable airmass which was present there. These storms combined to form a Mesoscale Convection System (a Mesoscale Convection System or MCS is a network of thunderstorms which becomes organized on a scale larger than the individual thunderstorms, and normally persists for several hours or more) that continued to expand and move towards the northwest. By 5:00 p.m. the entire southeast quarter of Arizona was under cloud cover associated with MCS. Radar reports indicated rainfall amounts over 1.5 inches in some areas. At 9:30 p.m. the leading edge of a thunderstorm outflow boundary (a lower layer of the atmosphere most prone to friction that separates thunderstorm-cooled air or outflow from the surrounding air; similar in effect to a cold front with passage marked by a wind shift and usually a drop in temperature) spawned by MCS reached Yuma and produced sustained south-southeast winds of 37 mph with gusts up to 44 mph. Visibility dropped rapidly from 10 miles to 1 mile due to blowing sand and dust. Between 10 p.m. and midnight visibility was at or below 1 mile and as low as 1/4 mile as south winds gusted near 40 mph. As is typical for a thunderstorm outflow boundary, barometric pressure rose rapidly and the air temperature fell, in this case 10 °F. Restricted visibility (6 miles or less) was measured through 2:00 a.m. on August 19. The variation in wind speeds throughout the day can be seen in Figure 1. This data was taken from four sites in the Yuma area maintained by the University of Arizona.

Weather on August 18, 2002 (continued)

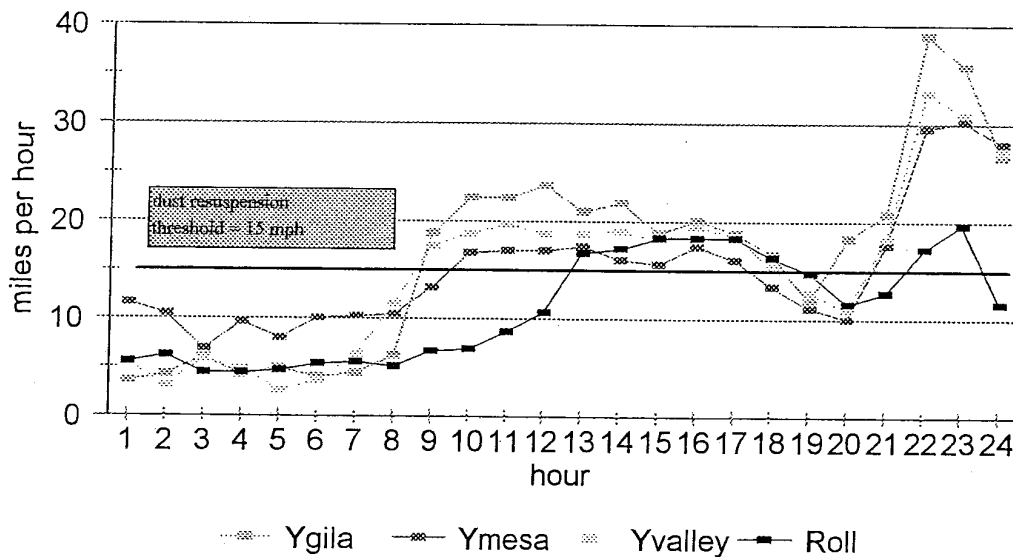


Figure 1. Maximum hourly wind speeds at four Yuma sites on August 18, 2002

The data in Figure 1 show high winds with dust producing potential were not limited to the late evening thunderstorm. In fact, 10 hours in the middle of the day had maximum wind speeds in excess of 15 mph, the threshold wind speed to produce blowing dust. The highest wind speeds at the four sites were consistent with the observations at the Yuma Marine Corps Air Station.

PM₁₀ Concentrations

PM₁₀ monitoring networks are operated throughout Arizona, California, Sonora, and Baja California. Given the size and strength of this particular storm, and its generally northwestern movement from east-central Sonora towards Yuma, it's instructive to compare Yuma's PM₁₀ concentration on August 18, 2002 with other sites. First, the only elevated concentrations recorded in Arizona were located in Yuma. In Phoenix and at the U.S.-Mexico border (including Nogales, Douglas-Aqua Prieta) concentrations were normal. Second, in the Imperial Valley, concentrations ranged as high as almost 300 $\mu\text{g}/\text{m}^3$ on a 24-hour basis. Third, monitoring sites in Baja California, near the border, recorded concentrations as high as almost 700 $\mu\text{g}/\text{m}^3$ on a 24-hour basis. The centerline of the storm, in its northwesterly course, appeared to have passed somewhat west of Yuma. Figure 2 presents these concentrations.

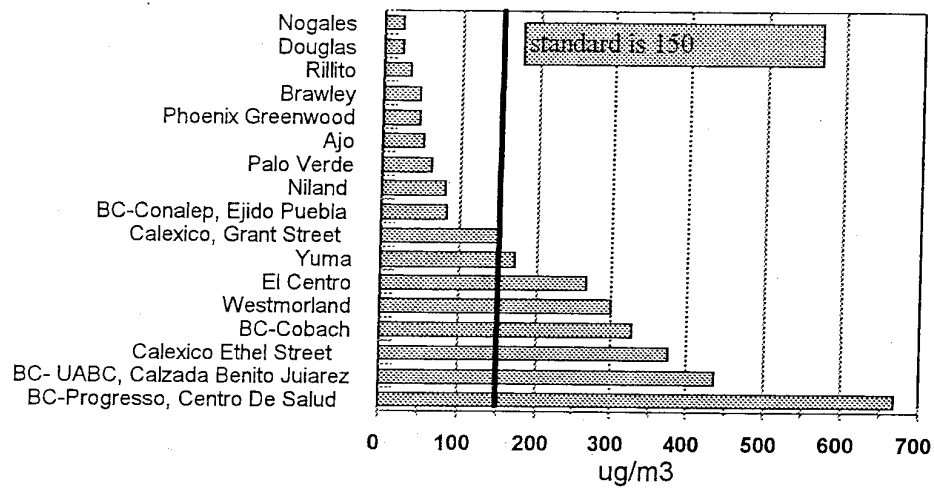


Figure 2. August 18, 2002 PM₁₀ concentrations in Arizona, California, and northern Mexico

STATE

PHX METRO

AUG 18

2006

18. Isolated showers and t-storms formed between Wickenburg and Quartzsite around 0500 hrs and moved NW as they weakened. The rest of the state was mostly clear early in the day. At 12Z zonal flow continued to prevail over the N 1/2 of the U.S. Nearby a 500mb high height center was over the Pacific W of SFO while a 5870m low was over the Baja Spur. W winds aloft were present at 850 and 700 over AZ while E winds continued at 500mb. Relative humidity was highest over the E 1/2 of the state. Monsoon activity was rather minimal until late afternoon when large storms occurred over N Sonora and then built outward from the center; the formation of an MCS. The SE 1/4 of AZ was completely covered by anvil clouds by 1700 hrs with scattered t-storms beneath. Only 10 sites had rain thru 1700 hrs with the highest amount 0.39" at NOG. Very heavy rain fell after this hour, however, with radar-indicated areas of more than 1.5 inches. Other smaller cells developed along the RIM and these moved toward the deserts. A severe t-storm warning was issued for the Casa Grande area at 2130 hrs. At 2200 hrs YUM reported S wind gusts (outflow) to near 40 mph and a visibility of 1/2 mile in blowing sand and dust and this situation continued past midnight. TUS, DUG, and NOG all reported periods of rain and thunder and DUG even had fog.

The sky over the metro area was partly cloudy at dawn with large clouds and showers visible over the far W and NW valley. Winds were W 5 to 15 mph and dew pts were in the low 60's. This activity moved away and dissipated with mostly clear skies in place until mid afternoon. By then isolated convective clouds were present NE of the valley but extensive anvils covered the sky to the distant E-S. This layer moved slowly over mainly the S portion by 1800 hrs but spread over most of it by late evening. W winds had increased to over 25 mph most of the afternoon. Convective clouds approached the E valley from the E by dark with lots of lightning seen. Areas of blowing dust were seen. Outflow from the huge complex to the SE affected the area by 2200 hrs but did so from the "back door" as strong winds which moved over the YUM area spread across the central deserts from the SW. LUF was SWG30 at 2300 hrs. Meanwhile, Mesa was SE20 with light rain from activity to the E. The gusty winds continued into the next day as did the extensive cloud cover. Cloud types: CU, SC, TCU, CB, AC, ACCAS, ACMAM, CI. Coverage: Sct v Bkn (Ovc after 2000)

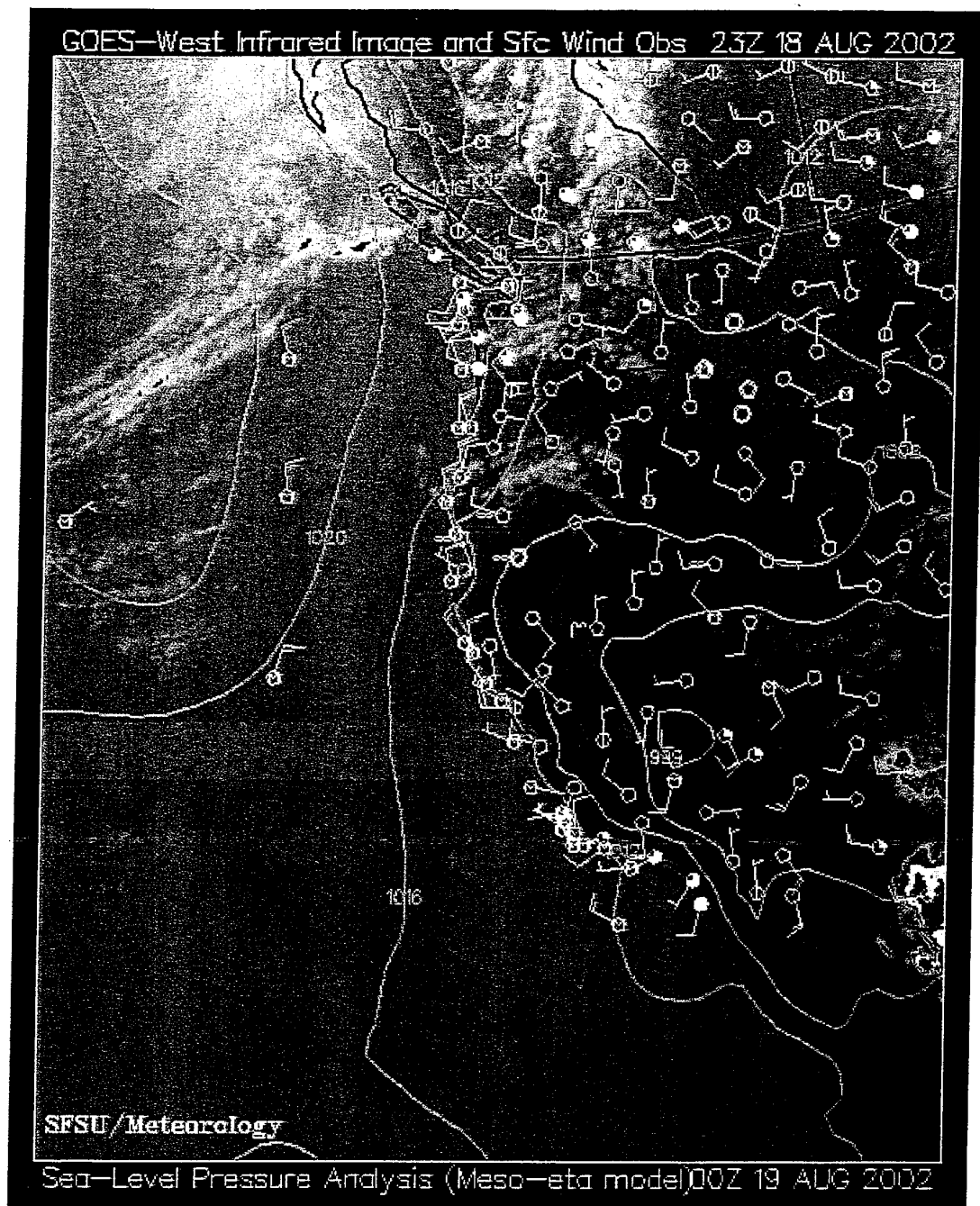
AUG 19

2006

19. A huge MCS which developed over Sonora and built N over S AZ continued to produce active weather into the early morning hours. At 0100 hrs YUM was still reporting blowing dust, TUS had thunder, and DUG light rain. At 0200 hrs TUS had thunder and NOG rain. At 04300 hrs TUS had rain. Precip and storms tapered off after that hour but considerable clouds continued to move N with all but the SE 1/4 covered at 0600 hrs. At that hour winds were under 10 mph statewide while dew pts were in the 50's and 60's at all sites except a few over the N. More showers developed over the S part of the state by mid-morning with an area containing a few t-storms moving NE over YUM county at 1000 hrs while others were located from Pima county to Pinal county. At 12Z a 5890m 500mb high height center was located over E AZ while a weak low was over n Baja. The flow aloft was S to W except between 500 and 400mb where it was E. At 1100 hrs IGM was SWG20, SAF was NWG21 while YUM had light rain. A sizeable area of light rain affected the central deserts between noon and 1430 hrs as it moved to the NW. A line of large storms had formed between Williams and Hannagan Meadow by then. These were moving N but building to the S. GBN reported rain at 1400 hrs while IGM, GCN, FLG, and PRC all had SW-W winds >20 mph. Isolated cells were also over Pima and Santa Cruz counties. At 1500 hrs WR and SOW reported rain. IGM was SWG29 and INW SWG31. An area of t-storms grew rapidly over N Pima county and then moved NNE before dissipating. Rain fell at PGE from 2100 hrs into the next morning while S winds there gusted near 40 mph. Rain totals thru 1700 hrs were mostly on the light side at the 31 sites that received it. The two exception were BIS and DUG which each reported a little over one inch although much of it came from the prior evening.

Copious amounts of high and middle clouds, debris from a large complex of t-storms which formed overnight over Sonora and S AZ, were over the valley after midnight and at dawn. At 0600 hrs winds around the metro area were light and variable while dew points were in the mid 50's to mid 60's. These clouds moved NW throughout the morning hours as they thickened and as light showers developed. There was considerable haze with visibility around 20 miles. Overcast skies and light showers were still present over the entire valley at noon while winds were mostly light and variable. Temperatures were slow to rise with most around 90 degrees at that hour. Some clearing began over the SE portion by 1400 hrs and by 1500 hrs had reached the downtown area. By then most of the shower activity was over the W valley. Winds were S-W to 15 mph and visibility was 15 to 20 miles. Large convective clouds developed to the distant SE of the valley after 1600 hrs and looked quite ominous as sundown neared. Large anvils from them expanded toward the SE portion but the cells died out after dark. They did provide a brief outflow boundary which increased SE winds to over 25 mph at times over much of the east half. Cloud types: CU, SC, TCU, CB, AC, ACCAS, CI, CS. Coverage: Bkn v Ovc

C67

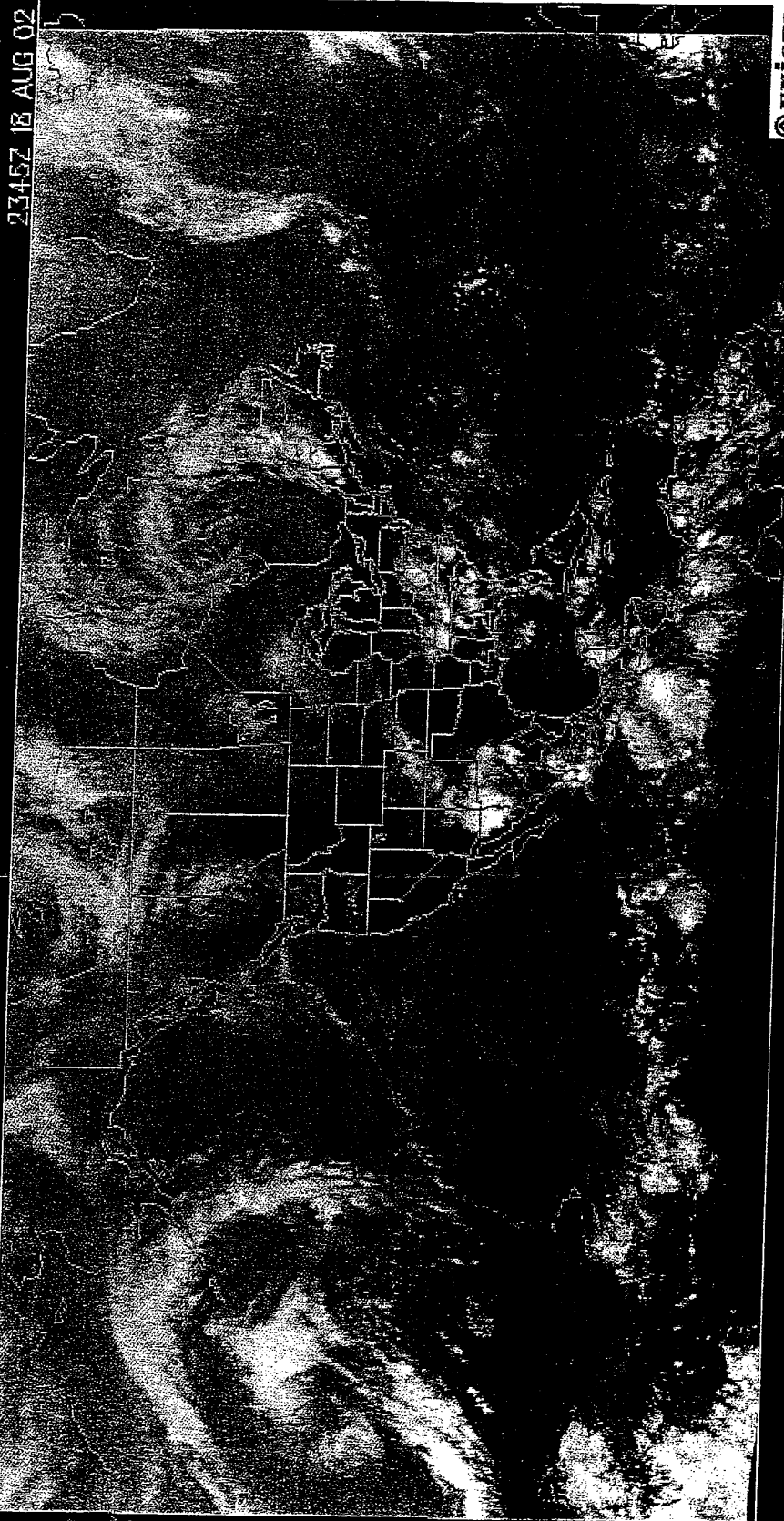


4 PM MST
18 AUG

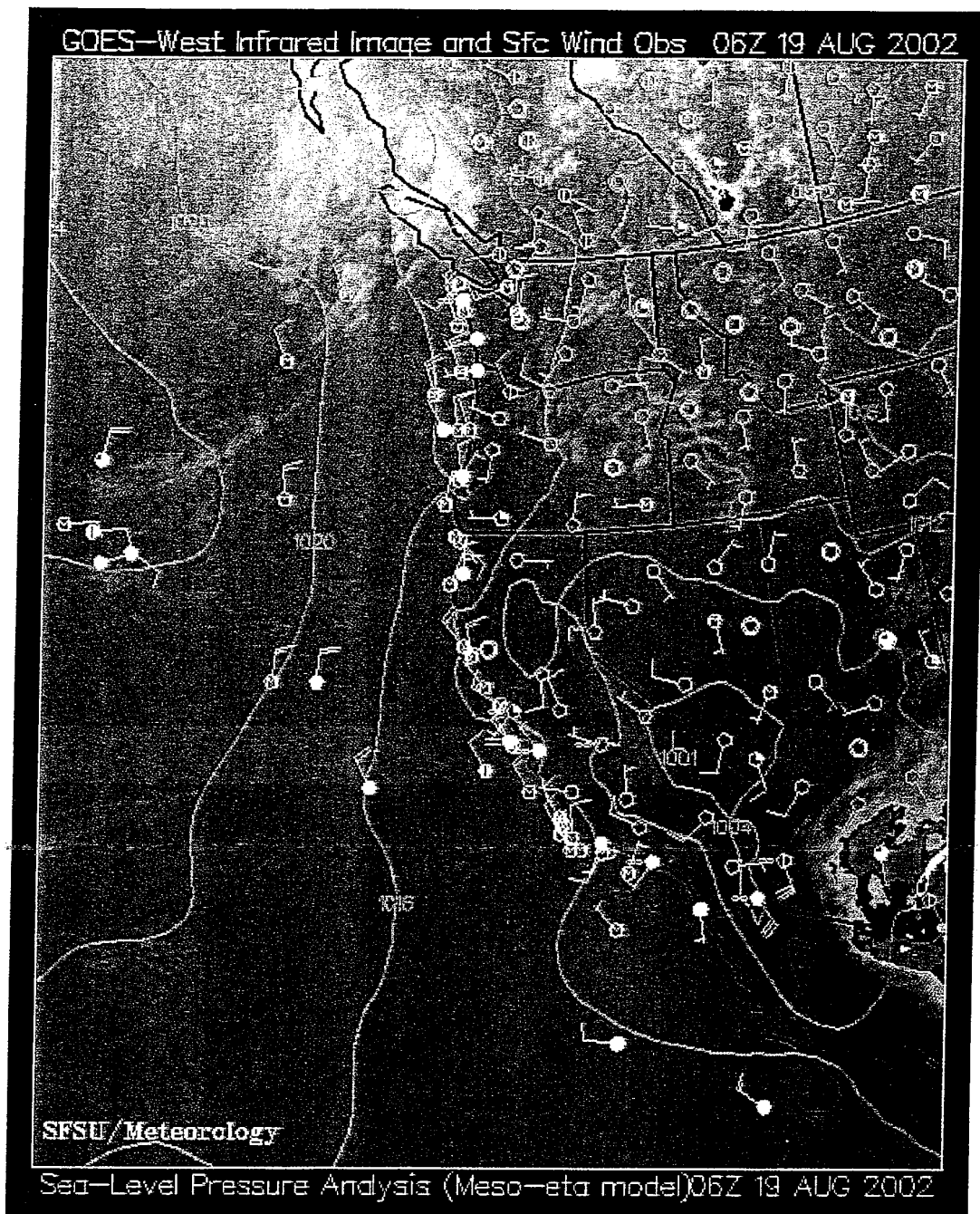
4:45 PM 18 AUG

GOES NH Infrared 11um


2345Z 18 AUG 02



© UNISYS



11 PM MST
18 AUG


 [NCDC](#) / [Climate Resources](#) / [Climate Data](#) / [Events](#) / [Storm Events](#) / [Results](#) / [Search](#) / [Help](#)

Event Record Details

Event: Dust Storm	State: Arizona
Begin Date: 18 Aug 2002, 09:45:00 PM MST	Map of Counties
Begin Location: Not Known	Forecast
End Date: 18 Aug 2002, 10:00:00 PM MST	Zones YUMA
End Location: Not Known	affected:
Magnitude: 0	
Fatalities: 0	
Injuries: 0	
Property Damage: \$ 0.0	
Crop Damage: \$ 0.0	

Description:

Dense blowing dust lowered visibility to less than a quarter mile.

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Please see the [NCDC Contact Page](#) if you have questions or comments.

Wind direction 150 @ 12 knots
sky condition temp pressure
STATION

ME 0256Z/1956L 15012KT 10SM UNR VIS FEW230 35/16 29.380

ME 0356Z/2056L 16016KT 10SM UNR VIS FEW230 33/19 29.470

SP 0430Z/2130L 15032G38KT 1SM RESTRICTED VIS DUE TO BLSA FEW230 32/18 29.500

ME 0456Z/2156L 16022G32KT 3/4SM RESTRICTED VIS DUE TO BLSA FEW230 32/19 29.510

SP 0506Z/2206L 17025G32KT 1/2SM RESTRICTED VIS DUE TO BLSA FEW230 32/21 29.510

ME 0556Z/2256L 17021KT 1/2SM RESTRICTED VIS DUE TO BLSA SCT230 31/16 29.510

ME 0656Z/2356L 17027G33KT 1SM RESTRICTED VIS DUE TO BLSA SCT230 30/16 29.520

SP 0710Z/0010L 17017G24KT 3SM RESTRICTED VIS DUE TO BLSA FEW230 30/17 29.520

ME 0756Z/0056L 18013KT 5SM RESTRICTED VIS DUE TO BLSA FEW230 29/19 29.550

ME 0856Z/0156L 18009KT 6SM RESTRICTED VIS DUE TO BLSA FEW230 29/20 29.520

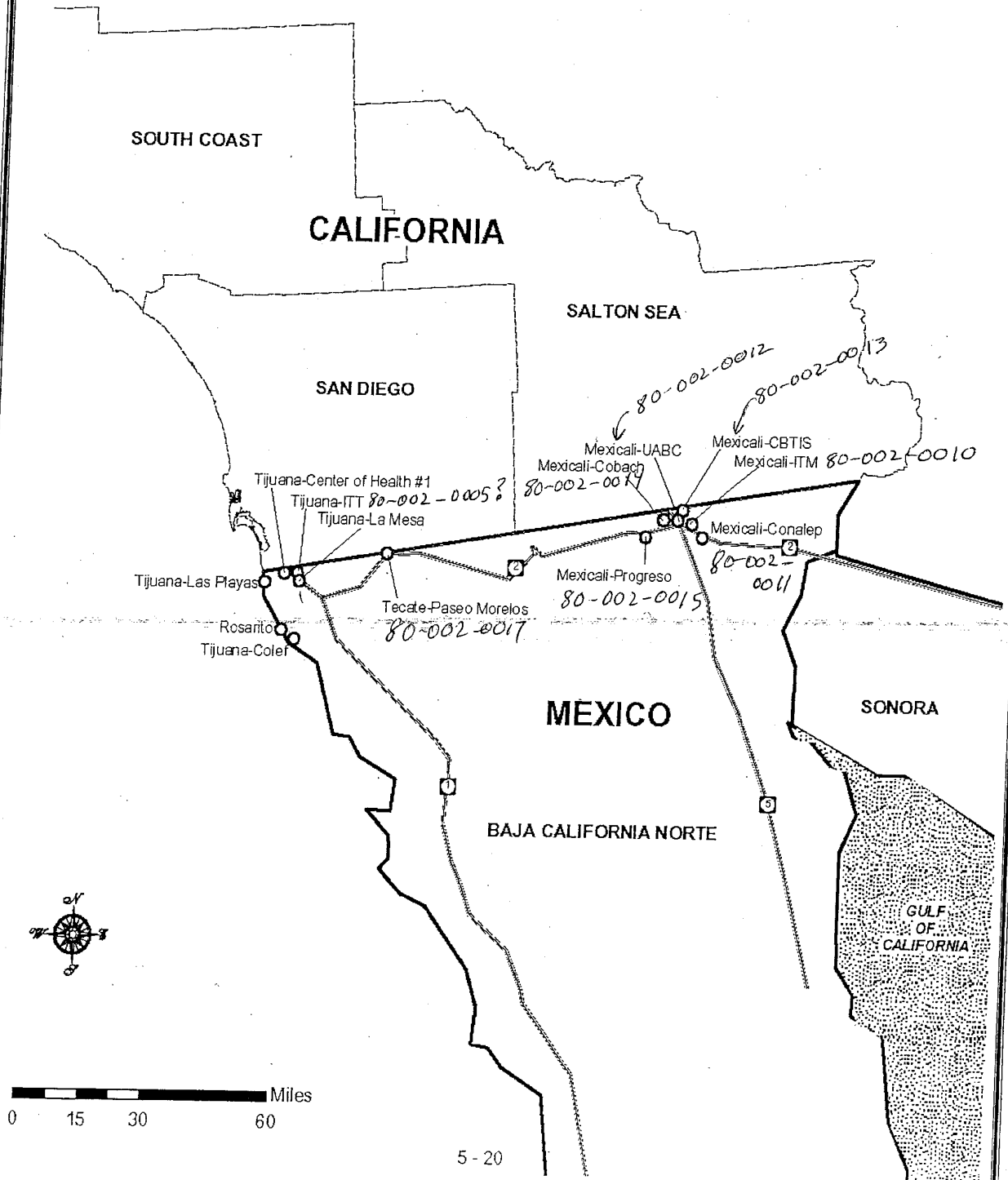
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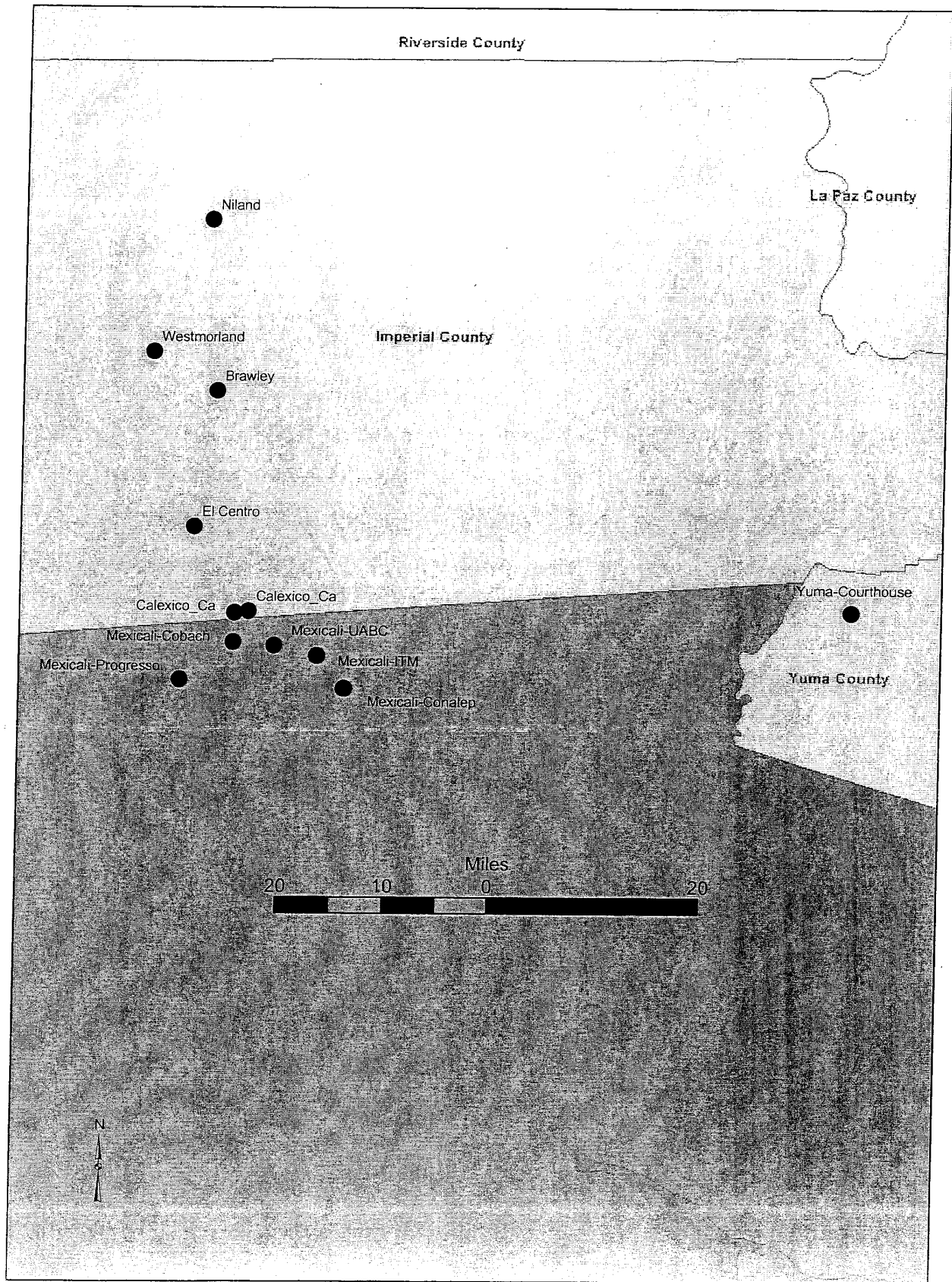
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ME 1156Z/0456L 11007KT 10SM UNR VIS SCT230 28/21 29.520

ME 1256Z/0556L 11008KT 10SM UNR VIS FEW050 FEW080 SCT120 28/21 29.520

Figure 16. Mexico
Monitoring Stations
(2000-2001)





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AIR QUALITY SYSTEM

RAW DATA DAILY

AMP350D

(81102) PM10 Total 0-10um

SITE ID: 80-002-0011 POC: 1
 COUNTY: (002) BAJA CALIFORNIA NORTE
 CITY: (52000) MEXICALI
 SITE ADDRESS: CONALEP, EJIDO PUEBLA, MEXICALI, BCN
 SITE COMMENTS: CARB SITE NUMBER 85-011.
 MONITOR COMMENTS: GMW HI-VOLUME SAMPLER W/ SIERRA ANDERSON 1200 SSI II
 SUPPORT AGENCY: (0959) SEMARNAP
 MONITOR TYPE: OTHER
 COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GMW-1200 GRAVIMETRIC
 REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

STATE: (80) COUNTRY OF MEXICO
 AQCR: (250) COUNTRY OF MEXICO
 URBANIZED AREA: (0000) NOT IN AN URBAN
 LAND USE: AGRICULTURAL
 LOCATION SETTING: RURAL

an. 8, 2003
 CAS NUMBER:
 LATITUDE: 32.570833
 LONGITUDE: -115.350833
 UTM ZONE: 11
 UTM NORTHING: 3604721
 UTM EASTING: 654812
 ELEVATION-MSL: 4
 PROBE HEIGHT:

DURATION: 7
 UNITS: (001) UG/CU METER (25 C)
 MIN DETECTABLE: 2

REPORT FOR: 2002

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	38	42	46	51	56	61	67	72	77	82	87	92
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	33	38	43	48	53	58	63	68	73	78	83	88
	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN
	142	147	152	157	162	167	172	177	182	187	192	197
	100	105	110	115	120	125	130	135	140	145	150	155
	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF
	156	161	166	171	176	181	186	191	196	201	206	211
	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN
	86	91	96	101	106	111	116	121	126	131	136	141
	73	78	83	88	93	98	103	108	113	118	123	128
	33	38	43	48	53	58	63	68	73	78	83	88
	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN
	142	147	152	157	162	167	172	177	182	187	192	197
	100	105	110	115	120	125	130	135	140	145	150	155
	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF
	156	161	166	171	176	181	186	191	196	201	206	211
	AN	AN	AN</									

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AIR QUALITY SYSTEM

RAW DATA DAILY AMP350D

(81102) PM10 Total 0-10um

SITE ID: 80-002-0012 POC: 1
 COUNTY: (002) BAJA CALIFORNIA NORTE
 CITY: (52000) MEXICALI
 STATE: (80) COUNTRY OF MEXICO
 AOCR: (250) COUNTRY OF MEXICO
 URBANIZED AREA: (0000) NOT IN AN URBAN
 LAND USE: COMMERCIAL
 LOCATION SETTING: URBAN AND CENTER CITY
 SITE ADDRESS: UABC, CALZADA BENITO JUAREZ, MEXICALI
 SITE COMMENTS: CARB SITE NUMBER 85-012.
 MONITOR COMMENTS: GMW HI-VOLUME SAMPLER W/ SIERRA ANDERSON 1200 SSI II
 SUPPORT AGENCY: (0959) SEMARNAP
 MONITOR TYPE: OTHER
 COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GMW-1200 GRAVIMETRIC
 REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

CAS NUMBER: 32.629167
 LATITUDE: -115.446944
 UTM ZONE: 11
 UTM NORTHING: 3611053
 UTM EASTING: 645695
 ELEVATION-MSL: 1
 PROBE HEIGHT: 7
 DURATION: 7
 UNITS: (001) UG/CU METER (25 C)
 MIN DETECTABLE: 2

REPORT FOR: 2002

DAY	MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1			65										
2		121			AF	42							
3				106									
4													
5													
6							86						
7			AN						AN	78	71		
8		122			AF	92	68	AG					
9				81					55				
10													
11													
12										79	AF		
13													
14		AN				117	60	61					
15				41a									
16													
17		85											
18													
19			AF							58	AF		
20		AF	AG		55	P	402	53	P 434				
21				92									
22		60											
23													
24													
25										63			
26			AF				82	63					
27		101			61	39							
28				AN									
29			86										
30													
31									127	24	AN		
NO.	5	2	4	3	5	5	5	5	5	5	1	0	0
MAX:	122	86	106	117	402	86	70	434	434	79	71		
MEAN:	98	76	80	78	125	76	60	147	147	63	71		
ANNUAL OBSERVATIONS: 58													
ANNUAL MEAN: 63													
ANNUAL MAX: 434													
Values marked with 'P' exceed the PRIMARY STANDARD of: 155													
Values marked with 'S' exceed the SECONDARY STANDARD of: 155													

RAW DATA DAILY AMP350D

SITE ID: 80-002-0014 POC: 1

SITE ID: 80-002-0014 POC: 1

COUNTY: (002) BAJA CALIFORNIA NORTE

CITY: (52000) MEXICALI

SITE ADDRESS: COBACH, COLEGIO DE BACHILLERES MEXICALT

SITE COMMENTS: CARB SITE NUMBER 85--014

MONITOR COMMENTS:GMW HI-VOLUME SAMPLER W/ SIERRA ANDERSON 1200 SSI T

SUPPORT AGENCY: (0959) SEMARNAP

MONITOR TYPE: OTHER

COLLECTION AND ANALYSIS METHOD:

REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD
COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GMW-1200 GRAVIMETRIC

REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

REPORT FOR: 2002

MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1	AF	AN				123	106					
2				AF	60							
3			AF									
4												
5		P 211	AG						99	AN		
6								64				
7		P 300				AN	54					
8	P 225			AF	AN							
9					87							
10												
11												
12												
13								63	149	AF		
14	P 184	AG		P 175	92	AF	58					
15			AF									
16												
17												
18												
19												
20		AF				AG	60	P 325	P 181	55		
21	P 222			93	AF	AF						
22			P 243									
23			75a									
24		P 184										
25												
26		AF					55	87	P 159	97		
27	P 294			P 167	73	104						
28												
29		P 260	AN									
30												
31								P 186	34	103		
NO. :	4	4	2	4	3	2	6	5	5	3	0	0
MAX :	294	300	243	175	92	123	106	325	181	103		
MIN :	231	239	159	131	75	114	114	114	114	114		

Values marked with 'P' exceed the PRIMARY STANDARD of: 155
Values marked with 'S' exceed the SECONDARY STANDARD of: 155

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AIR QUALITY SYSTEM

AMP350D

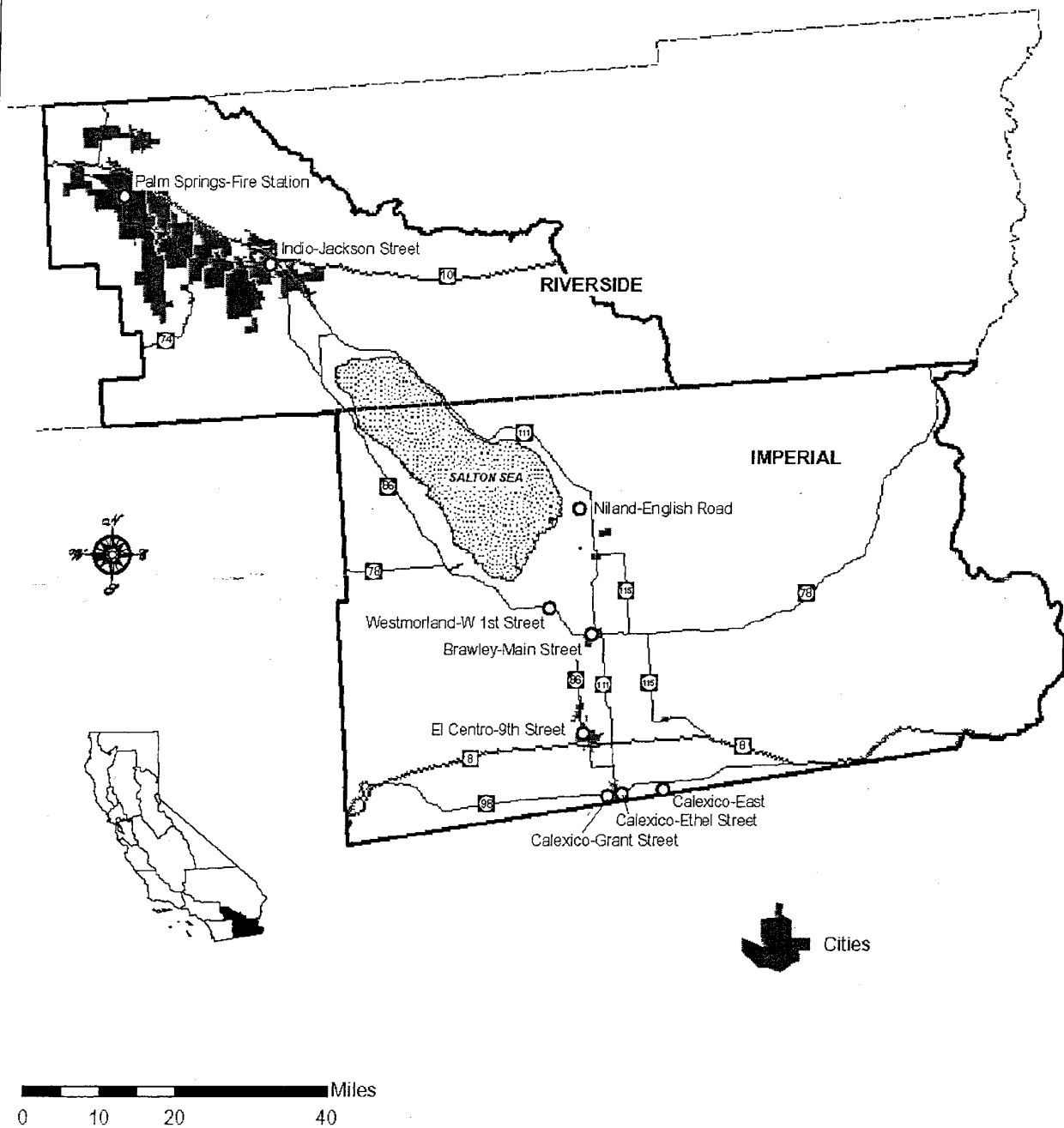
an. 8, 2003

Qualifier Code	Qualifier Description
A	HIGH WINDS
AF	SCHEDULED BUT NOT COLLECTED
AG	SAMPLE TIME OUT OF LIMITS
AJ	FILTER DAMAGE
AK	FILTER LEAK
AN	MACHINE MALFUNCTION

QUALIFIER CODES:

Qualifier Type
Exceptional Event Qualifier
Null Data Qualifier
Null Data Qualifier
Null Data Qualifier
Null Data Qualifier
Null Data Qualifier

Figure 10. Salton Sea Air Basin Monitoring Stations (2000-2001)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA DAILY

(81102) PM10 Total 0-10um

SITE ID: 06-025-0003 POC: 2

COUNTY: (025) IMPERIAL

CITY: (08058) BRAWLEY

SITE ADDRESS: 401 MAIN ST., BRAWLEY

SITE COMMENTS:ARB SITE NUMBER 1300693 NEW SITE 04-82

MONITOR COMMENTS:GWM HI-VOLUME SAMPLER W/ SIERRA ANDERSON 1200 SSI II

SUPPORT AGENCY: (0518) IMPERIAL COUNTY APCD

MONITOR TYPE: SLAMS

COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GWM-1200 GRAVIMETRIC

REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

AMP350D

STATE: (06) CALIFORNIA

AQCR: (033) SOUTHEAST DESERT

URBANIZED AREA: (0000) NOT IN AN URBAN

LAND USE: COMMERCIAL

LOCATION SETTING: URBAN AND CENTER CITY

REPORT FOR: 2002

CAS NUMBER:
LATITUDE: 32.978333
LONGITUDE: -115.533333
UTM ZONE: 11
UTM NORTHING: 3619648
UTM EASTING: 637052
ELEVATION-MSL:0
PROBE HEIGHT:

DURATION: 7

UNITS: (001) UG/CU METER (25 C)

MIN DETECTABLE: 2

DAY	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
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34

NO.: 0 0 0 0 0 0 0 0 0 0 0 0 0
MAX: 5 44 35 44 44
MEAN:

ANNUAL OBSERVATIONS: 5 ANNUAL MEAN: 35 ANNUAL MAX: 44

Values marked with 'P' exceed the PRIMARY STANDARD of: 155
Values marked with 'S' exceed the SECONDARY STANDARD of: 155

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA DAILY

(81102) PM10 Total 0-10um

SITE ID: 06-025-0004 POC: 2

COUNTY: (025) IMPERIAL

CITY: (09710) CALEXICO

SITE ADDRESS: 900 GRANT STREET, CALEXICO, CA

SITE COMMENTS: LOCATED 1/4 MI NORTH OF CALEXICO AIRPORT, 1/2 MI NORTH OF MEXI.

MONITOR COMMENTS: GMW HI VOLUME SAMPLER W/ SIERRA ANDERSON SA1200 SS.

SUPPORT AGENCY: (0518) IMPERIAL COUNTY APCD

MONITOR TYPE: SLAMS

COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GMW-1200 GRAVIMETRIC

REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

AMP350D

STATE: (06) CALIFORNIA

AOCR: (033) SOUTHEAST DESERT

URBANIZED AREA: (0000) NOT IN AN URBAN

LAND USE: RESIDENTIAL

LOCATION SETTING: SUBURBAN

REPORT FOR: 2002

CAS NUMBER: an. 8, 2003
LATITUDE: 32.673889
LONGITUDE: -115.503056
UTM ZONE: 11
UTM NORTHING: 3615935
UTM EASTING: 640360
ELEVATION-MSL: 0
PROBE HEIGHT: 3
DURATION: 7
UNITS: (001) UG/CU METER (25 C)
MIN DETECTABLE: 2

DAY	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
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31												

57

78

147

54

115

5

147

90

ANNUAL OBSERVATIONS: 5 ANNUAL MEAN: 90 ANNUAL MAX: 147

Values marked with 'P' exceed the PRIMARY STANDARD of: 155
Values marked with 'S' exceed the SECONDARY STANDARD of: 155

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA DAILY AMP350D

(81102) PM10 Total 0-10um

SITE ID: 06-025-0005 POC: 1

COUNTY: (025) IMPERIAL

CITY: (09710) CALEXICO

SITE ADDRESS: 1029 ETHEL ST, CALEXICO HIGH SCHOOL

SITE COMMENTS: DETERMINE IMPACT OF POLLUTANT TRANSPORT FROM MEXICO INTO IMP.

MONITOR COMMENTS: GMW HI-VOLUME SAMPLER W/ SIERRA ANDERSON 1200 SSI II

SUPPORT AGENCY: (0145) CALIFORNIA AIR RESOURCES BOARD

MONITOR TYPE: SLAMS

COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GMW-1200 GRAVIMETRIC

REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

CAS NUMBER: an. 8, 2003

LATITUDE: 32.676111

LONGITUDE: -115.483333

UTM ZONE: 11

UTM NORTHING: 3616208

UTM EASTING: 642206

ELEVATION-MSL: 1

PROBE HEIGHT:

DURATION: 7

UNITS: (001) UG/CU METER (25 C)

MIN DETECTABLE: 2

REPORT FOR: 2002

DAY	MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1													
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30													
31													

56

61

P 373a

63

93

NO.: 0 0 0 0 0 0 0 0 0 5 0 0 0 0
MAX: 373 373
MEAN: 129 129

ANNUAL OBSERVATIONS: 5 ANNUAL MEAN: 129 ANNUAL MAX: 373

Values marked with 'P' exceed the PRIMARY STANDARD of: 155
Values marked with 'S' exceed the SECONDARY STANDARD of: 155

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA DAILY

an. 8, 2003
CAS NUMBER:
LATITUDE: 32.791667
LONGITUDE: -115.561667
UTM ZONE: 11
UTM NORTHING: 3628916
UTM EASTING: 634686
ELEVATION-MSL: 0
PROBE HEIGHT:
DURATION: 7
UNITS: (001) UG/CU METER (25 C)
MIN DETECTABLE: 2

STATE: (06) CALIFORNIA
AQCR: (033) SOUTHEAST DESERT
URBANIZED AREA: (0000) NOT IN AN URBAN
LAND USE: COMMERCIAL
LOCATION SETTING: URBAN AND CENTER CITY

REPORT FOR: 2002

(81102) PM10 Total 0-10um
SITE ID: 06-025-1003 POC: 2
COUNTY: (025) IMPERIAL
CITY: (21782) EL CENTRO
SITE ADDRESS: 150 9TH ST., EL CENTRO
SITE COMMENTS: ARB SITE NAME & NO. EL CENTRO-150 9TH ST., (1300694), STARTED
MONITOR COMMENTS: GNM HI-VOLUME SAMPLER W/ SIERRA ANDERSON 1200 SSI II
SUPPORT AGENCY: (0518) IMPERIAL COUNTY APCD
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GMW-1200 GRAVIMETRIC
REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

DAY	MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
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42e

58e

P. 263

27

55

HO.:	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX:													
MEAN:													

ANNUAL OBSERVATIONS: 5 ANNUAL MEAN: 89 ANNUAL MAX: 263
1 Values marked with 'P' exceed the PRIMARY STANDARD of: 155
1 Values marked with 'S' exceed the SECONDARY STANDARD of: 155

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AIR QUALITY SYSTEM

RAW DATA DAILY AMPJ50D

(81102) PM10 Total 0-10um

SITE ID: 06-025-4003 POC: 1

COUNTY: (025) IMPERIAL

CITY: (84606) WESTMORLAND

SITE ADDRESS: 202 W FIRST STREET, WESTMORLAND

SITE COMMENTS:ARB SITE WESTMORLAND - 202 W FIRST (1300697)

MONITOR COMMENTS:GMW HI-VOLUME SAMPLER W/ SIERRA ANDERSON 1200 SSI II

SUPPORT AGENCY: (0518) IMPERIAL COUNTY APCD

MONITOR TYPE: SLAMS

COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GMW-1200 GRAVIMETRIC

REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

an. 8, 2003

CAS NUMBER:

LATITUDE: 33.0325

LONGITUDE: -115.6225

UTM ZONE: 11

UTM NORTHING: 3655550

UTM EASTING: 628650

ELEVATION-MSL:0

PROBE HEIGHT:

DURATION: 7

UNITS: (001) UG/CU METER (25 C)

MIN DETECTABLE: 2

REPORT FOR: 2002

DAY	MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1													
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P. 297

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297

98

ANNUAL OBSERVATIONS: 5

ANNUAL MEAN:

98

ANNUAL MAX:

297

1

Values marked with 'P' exceed the PRIMARY STANDARD of: 155

1

Values marked with 'S' exceed the SECONDARY STANDARD of: 155

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AIR QUALITY SYSTEM

RAW DATA DAILY AMP350D

(81102) PM10 Total 0-10um

SITE ID: 06-025-4004 POC: 1

COUNTY: (025) IMPERIAL

CITY: (51396) NILAND

SITE ADDRESS: 7711 ENGLISH ROAD, NILAND

SITE COMMENTS: CARB SITE NUMBER 13-997

MONITOR COMMENTS: GWM HI-VOLUME SAMPLER W/ SIERRA ANDERSON 1200 SSI II

SUPPORT AGENCY: (0518) IMPERIAL COUNTY APCD

MONITOR TYPE: OTHER

COLLECTION AND ANALYSIS METHOD: (063) HI-VOL SA/GWM-1200 GRAVIMETRIC

REPORTING ORG: (0145) CALIFORNIA AIR RESOURCES BOARD

STATE: (06) CALIFORNIA
AOCR: (033) SOUTHEAST DESERT
URBANIZED AREA: (0000) NOT IN AN URBAN
LAND USE: DESERT
LOCATION SETTING: RURAL

REPORT FOR: 2002

CAS NUMBER: an. 8, 2003
LATITUDE: 33.213611
LONGITUDE: -115.544444
UTM ZONE: 11
UTM NORTHING: 3675700
UTM EASTING: 635640
ELEVATION-MSL: 0
PROBE HEIGHT:

DURATION: 7

UNITS: (001) UG/CU METER (25 C)

MIN DETECTABLE: 2

DAY	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1												
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79

43

58

NO.:	0	0	0	0	0	0	0	0	0	0	0	0
MAX:												
MEAN:												

ANNUAL OBSERVATIONS: 5

ANNUAL MEAN:

54

ANNUAL MAX:

79

Values marked with 'P' exceed the PRIMARY STANDARD of: 155

Values marked with 'S' exceed the SECONDARY STANDARD of: 155

APPENDIX F

Three-day Wind Forecast for Yuma and Vicinity



THREE-DAY WIND FORECAST FOR YUMA AND VICINITY

ISSUED: MON JAN 12 2004

VALID: TUE-THU JAN 13-15 2004

WEATHER SYNOPSIS: The main storm track has shifted north of the area and will remain so on Tuesday and Wednesday. Down-river winds should not exceed 15 mph. On Thursday a weather disturbance is forecast to approach from the northwest and may bring an increase in winds but no precipitation. -Reith

Forecast winds for Tuesday, January 13: **No significant winds expected.**

Forecast winds for Wednesday, January 14: **No significant winds expected.**

Forecast winds for Thursday, January 15: **West to northwesterly 15-20 mph during the daytime hours.**

Actual winds on Sunday, January 11 were mostly 10 mph or less. *

*From data recorded at MCAS, Yuma

PM-10 & PM-2.5 (PARTICLES)

Description – The term “particulate matter” (PM) includes both solid particles and liquid droplets found in air. Many manmade and natural sources emit PM directly or emit other pollutants that react in the atmosphere to form PM. Particles less than 10 micrometers in diameter tend to pose the greatest health concern because they can be inhaled into and accumulate in the respiratory system. Particles less than 2.5 micrometers in diameter are referred to as “fine” particles and are responsible for many visibility degradations (brown cloud). Particles with diameters between 2.5 and 10 micrometers are referred to as “coarse”.

Sources – Fine = All types of combustion (motor vehicles, power plants, wood burning, etc.) and some industrial processes. Coarse = crushing or grinding operations and dust from paved or unpaved roads.

Potential health impacts – PM can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases, such as asthma and chronic bronchitis.

Units of measurement – Micrograms per cubic meter (ug/m³)

Averaging interval – 24 hours (midnight to midnight).

Reduction tips – Stabilize loose soils, minimize travel on dirt roads, utilize tarps on haul trucks, limit use of leaf-blowers, and on high-wind days reduce outdoor activities.

APPENDIX G

ADEQ Air Quality Exceptional and Natural Events Policy PM₁₀ Best Available Control Measures

APPENDIX G

CANDIDATE BACM/MSM CONTROL MEASURES FOR SIGNIFICANT SOURCE CATEGORIES

Identified PM10 Best Available Control Measures/Most Stringent Measures		
Construction, Land Clearing, and Earthmoving		
Agency	Preliminary Identified Affected Rules	Requirements
Soil Specific Requirements for Use of Surfactants and Tackifiers		
Clark County, Nevada	Construction Activities Dust Control Handbook	<ul style="list-style-type: none"> Stabilize material or soil with, water, water and tackifier, or water and surfactant mixture, based on soil type, for the following operations: backfilling, clearing and grubbing, crushing, cut and fill, and trenching. Soil classified as having a low, moderate low, moderate high, or high emissions potential based on soil silt content and optimum moisture content [Clark County Construction Activities Dust Control Handbook] An application for a dust control permit for a construction project of fifty (50) acres or more in area shall contain an actual soils analysis of the entire project.
Requirement for Dust Control Monitor at Large Construction Sites		
Clark County, Nevada	AQR § 94.7.5	<ul style="list-style-type: none"> Dust control monitor required for projects with < 50 acres of actively disturbed area Requirement remains in place until less than 50 acres are actively disturbed and previously disturbed areas have long term stabilization in place.
Coachella Valley, California	Final 2002 Coachella Valley PM10 SIP, June 2002	(Proposed) Dust control monitor (responsible person) required for sites with greater than or equal to 50 acres of actively disturbed soils. Monitor(s) must be hired by property owner or developer, have dust control as primary responsibility, and have the authority to initiate dust control measures.
Dust Control Class		
Clark County, Nevada	AQR § 94.7.6	<p>Require successful completion of a Clark County Department of Air Quality Management Dust Control Class at least once every three years for the following:</p> <ul style="list-style-type: none"> Construction site superintendent or other designated on-site representative of the project developer All construction site supervisors and foremen Water truck and water pull driver(s) for each construction project
Site-Specific Dust Mitigation Plan and Permit Requirements		
Maricopa County	Rule 310, § 303 et. sec. § 304.3	<ul style="list-style-type: none"> Dust control plan required for operations that entail earthmoving operations with a disturbed surface area that equals or exceeds 0.10 acre. Implement on primary and one contingency control for each dust generating operation.
Clark County, Nevada	AQR § 94.4.2	<ul style="list-style-type: none"> A dust control permit is required for soil disturbing or construction activities greater than or equal to 0.25 acre in overall area, mechanized trenching greater than or equal to 100 feet in length, or for mechanical demolition of any structure greater than or equal to 1,000 square feet. Site specific, soil-specific, and phase-specific dust mitigation plan implementing best management practices required where disturbed area and/or construction site greater than or equal to 10 acres, trenching greater than 1 mile, demolition with explosives.
Coachella Valley, California	Final 2002 Coachella Valley PM10 SIP, June 2002	<p>Proposed revision to local dust control ordinance and AQMD Rule 403 and 403.1:</p> <ul style="list-style-type: none"> Currently, requires dust control plan before issuance of a grading permit for all earth-moving activities. However, a revised dust control ordinance is <u>proposed</u> to include a requirement for local jurisdiction approval of a dust control plan for any site that requires a building permit if the project has disturbed

Identified PM10 Best Available Control Measures/Most Stringent Measures		
Construction, Land Clearing, and Earthmoving		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>surfaces greater than 5,000 square feet (.115 acres).</p> <ul style="list-style-type: none"> Sources that are not required to obtain a local jurisdiction grading permit or building permit (flood control/water district projects, school districts, CalTrans, etc.) are subject to AQMD Rule 403 and 403.1 requirements. In order to be consistent with the local dust control ordinance requirements, these activities are <u>proposed</u> to be required to obtain a dust control plan approved by the AQMD. The proposed thresholds are sites with more than one acre of disturbed surfaces, activities that import or export more than 100 cubic yards of material, or trenching activities greater than 100 feet in length. The plan must have the required elements described in the Coachella Valley Dust Control Handbook (which will be developed concurrently with the revised dust control ordinance). <p>Proposed specific work practices to be incorporated into the revised dust control ordinance:</p> <ul style="list-style-type: none"> Earth-moving operations on sites with greater than one acre of disturbed surfaces required to operate a water application system (i.e., water truck) while conducting earth-moving operations, if watering is the selected control measure. Short-term stabilization (maintaining soils in a damp condition, surface crust, or chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months) required for after-hours/weekends. Long-term stabilization techniques (e.g., vegetation, and chemical stabilization with access restriction) required within 10 days for areas where construction activities are not scheduled for 30 days.
South Coast Air Quality Management District (SCAQMD)	Rule 403 and Rule 403 Implementation Handbook	<p>1) A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source.</p> <p>(2) A person conducting active operations within the boundaries of the South Coast Air Basin shall utilize one or more of the applicable best available control measures to minimize fugitive dust emissions from each fugitive dust source type which is part of the active operation.</p> <p><u>Best Available Control Measures Land Clearing/Earth-Moving (Rule 403 Implementation Handbook)</u></p> <p>(A) Watering (pre-grading): (1) Application of water by means of trucks, hoses and/or sprinklers prior to conducting any land clearing; (2) Pre-application of water to depths of proposed cuts.</p> <p>(A-1) Watering (post-grading): (1) In active earthmoving areas water should be applied at sufficient frequency and quantity to prevent visible emissions from extending more than 100 feet from the point of origin.</p> <p>(A-2) Pre-grading planning: (1) Grade each phase separately, timed to coincide with construction phase; or (2) Grade entire project, but apply chemical stabilizers or ground cover to graded areas where construction phase begins more than 60 days after grading phase ends.</p> <p>(B) chemical stabilizers: (1) only effective in areas, which are not subject to daily disturbances. (2) Vendors can supply information on product application and required concentrations to meet the specifications established by the Rule.</p> <p>(C) Wind fencing: (1) Three- to five-foot barriers with 50% or less porosity located adjacent to roadways or urban areas can be effective in reducing the amount of windblown material leaving a site. Must be implemented in conjunction with either measure (A-1) or (B).</p>

Identified PM10 Best Available Control Measures/Most Stringent Measures		
Construction, Land Clearing, and Earthmoving		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>(D) Cover haul vehicles: (1) Entire surface area of hauled earth should be covered once vehicle is full.</p> <p>(E) Bedliners in haul vehicles: (1) When feasible, use in bottom-dumping haul vehicles.</p> <p>(4) A person shall not cause or allow PM₁₀ levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM₁₀ monitoring. (H)(4) - This provision shall not apply if the dust control actions are implemented on a routine basis for each applicable fugitive dust source type.</p> <p><u>High Wind Measure</u></p> <p>(a) cease all active operations; or</p> <p>(b) apply water within 15 minutes to any soil surface which is being moved or otherwise disturbed.</p>
Washoe County, Nevada	040.030 District Board of Health Regulations Governing Air Quality Management	<p>1. Requires that reasonable precautions be taken to prevent the generation of dust. Reasonable precautions shall include one or more of the following, as required to control fugitive dust: cessation of operations, clean-up, sweeping, sprinkling, compacting, enclosure, chemical or asphalt sealing, and use of windscreens or snow fences.</p> <p>2. Except when engaged in commercial agricultural operations, no person may disturb the topsoil by removing, altering, or overlaying the ground cover through scraping, burning, excavating, storing of fill, application of palliative, or any other method on any real property unless reasonable precautions are taken to prevent generation of dust during both the active development phases and thereafter if the property is to remain unoccupied, unused, vacant or undeveloped. For any project involving one (1) acre or more of unimproved surface area a Dust Control Plan must be submitted to, and approved by, the Control Officer prior to disturbing the topsoil as specified above, and/or paving, coating or otherwise applying any material, except water, to the surface. In the dust control plan, the Control Officer shall require use of palliatives, reseeding, or other means to minimize windblown dust, if determined necessary.</p> <p>For any proposed division of land, special use permit application or zone change, the Control Officer shall require the applicant to submit soils data and any other pertinent data for the area in which the development is proposed, if determined necessary. If a determination is made that disturbance or development of the site may cause the generation of dust, the Control Officer shall require one or more of the following:</p> <p>a. phased clearing of the land; b. the use of palliatives; c. the use of water; d. the use of snow fencing; e. the use of wind screens; f. reseeding g. controls on single lot development approved as a part of a land division subject to these regulations.</p> <p>After commencement of development if the approved elements of the dust control plan prove ineffective, the Control Officer shall require additional control measures to be instituted. Phasing will not be required as a control strategy after a project is under construction.</p> <p>In the case of subdivisions, condominiums and planned unit developments, a dust control plan must be</p>

Identified PM10 Best Available Control Measures/Most Stringent Measures		
Construction, Land Clearing, and Earthmoving		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>submitted as a part of the final map approval process. If a development, which will involve the disturbance of more than one acre of land, requires a special use permit, the Control Officer shall require the dust control plan to be submitted and become a condition of the special use permit process.</p> <p>3. No person shall cause or permit the handling or storage of any material in a manner, which results or may result in the generation of dust.</p>
Mohave Desert Air Quality Management District (MDAQMD), California	Rule 403-1(C) Rule 403-2(C)(3)	<ul style="list-style-type: none"> • Dust control plan for construction/demolition source, maintain natural topography to extent possible • Dust control plan for construction source disturbing 100 or more acres • Describe applicable dust control measures • Provide stabilized access to the site as soon as possible (prior to project completion) • Maintain natural topography to extent possible • Construct parking lots and paved roads first, as feasible. • Construct upwind portions of project first, where feasible.
Requirements for Limiting Visible Emissions		
Maricopa County	Rule 310, § 301	Limit visible emissions from all construction activities to 20 percent opacity
Clark County, Nevada	AQR § 94.11.1 AQR § 94.11.2 AQR § 94.11.3	<ul style="list-style-type: none"> • Limit visible emissions from all construction activities to 20 percent opacity; 50 percent opacity using the instantaneous method. • Limit visible dust plume from all construction activities to 100 yards, horizontally or vertically from the point of origin. • Where dust control permit required but not issued or BACT not fully implemented, limit visible emissions from all to 20 percent opacity; 50 percent opacity using the instantaneous method; limit visible dust plume to less than 100 feet horizontally or vertically from the point of origin; or prohibit dust plume from crossing a property line.
SCAQMD, California	Rule 403(d)(1) Rule 403(f)(1)(A)	<ul style="list-style-type: none"> • Prevent visible emissions from any active operation, open storage pile, or disturbed surface area from crossing the property line • For large operations, conduct watering as necessary to prevent visible dust emission from exceeding 100 feet in length in any direction
Requirements for High Wind Conditions		
Maricopa County	Rule 310, § 300.1 Table 20	<p>Provides that winds over 25 mph shall be an “affirmative defense” where dust emissions exceed 20 percent opacity and all applicable BACM have been implemented.</p> <p><u>Wind Event Control Measures for dust generating activities</u></p> <ol style="list-style-type: none"> a. An owner and/or operator must implement one of the following control measures: <ol style="list-style-type: none"> 1. Cease dust generating operations for the duration of the condition/situation/event when the 60-minute average wind speed is greater than 25 miles per hour, and if dust generating operations are ceased for the remainder of the workday, stabilize the area; 2. Apply water or other suitable dust suppressant at least twice [once] per hour, in compliance with Section 301 of this rule; 3. Apply water as necessary to maintain a soil moisture content at a minimum of 12%,. 4. Implement (a)(2) or (a)(3), above, and construct fences or three-foot to five-foot high wind barriers with 50%

Identified PM10 Best Available Control Measures/Most Stringent Measures		
Construction, Land Clearing, and Earthmoving		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>or less porosity adjacent to roadways or urban areas to reduce the amount of wind-blown material leaving a site.</p> <p><u>Wind Event Control Measures – Temporary Disturbed Surface Areas (After Work Hours, Weekends, Holidays)</u></p> <p>a. An owner and/or operator must implement one of the following control measures:</p> <ol style="list-style-type: none"> 1. Uniformly apply and maintain surface gravel or dust suppressants, in compliance with Section 302.3 of this rule; 2. Apply water to all disturbed surface areas three times per day. If there is any evidence of wind-blown dust, increase watering frequency to a minimum of four times per day; 3. Apply water on open storage piles at least twice [once] per hour, in compliance with section 302.3 of this rule; or 4. Cover open storage piles with tarps, plastic, or other material such that wind will not remove the coverings. <p>b. Suggested additional control measures for contingency plans:</p> <ol style="list-style-type: none"> 1. Implement a combination of the control measures listed a (1) through a (4), above.
Clark County, Nevada	AQR § 94.9.3	<p>In the event there are wind conditions that cause fugitive dust emissions in excess of 20% opacity using the time averaged method of intermittent emissions method, in excess of 50% opacity using instantaneous method, or one hundred yard in length from the point of origin, in spite of the use of BACM, all construction activities that may contribute to these emissions shall immediately cease. Water trucks and water pulls shall continue to operate under these circumstances, unless poses a safety hazard [Clark County, AQR § 94.9.3].</p>
SCAQMD, California	Rule 403 Implementation Handbook	<p><u>Rule 403 Implementation Handbook Best Available Control Measures - Land Clearing/Earth-Moving High Wind Measure</u></p> <p>(a) cease all active operations; or</p> <p>(b) apply water within 15 minutes to any soil surface which is being moved or otherwise disturbed.</p>
SCAQMD, California	Rule 403.1(d) (applies only in the Coachella Valley)	<p>Requires that additional dust mitigation measures be implemented for disturbed areas and storage and handling of bulk materials. Stabilization procedures shall include one or more of the following:</p> <p>(A) Application of water to at least 70 percent of the surface area of such bulk material deposits at least three times per day when there is evidence of wind driven fugitive dust;</p> <p>(B) Application of chemical dust suppressants in sufficient concentration so as to maintain a stabilized surface for a period of at least six months;</p> <p>(C) Installation of wind breaks of such design to reduce maximum wind gusts to less than 25 miles per hour in the area of the bulk material deposits.</p>
Material Handling		
Clark County, Nevada	Construction Activity Dust Control Handbook – blasting, clearing and grubbing, crushing, screening, staging areas, trenching, truck loading, stockpiling, cut and fill	<ul style="list-style-type: none"> • Stabilize surface soils where loaders, support equipment and vehicles will operate by either: 1. Pre-water and maintain surface soils in a stabilized condition where loaders, support equipment and vehicles will operate; or 2. Apply and maintain a dust palliative on surface soils where loaders, support equipment and vehicles will operate • Stabilize material during loading – empty loader bucket slowly and keep loader bucket close to the truck to maximize the drop height while dumping. Based on soil type apply water; water and tackifier mixture; or water and surfactant mixture prior to loading and while loading.

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Trackout Control		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	310.01 Fugitive Dust From Open Areas, Vacant Lots, Unpaved Parking Lots, And Unpaved Roadways	<p>§306: In the event that erosion-caused deposition of bulk materials or other materials occurs on any adjacent paved roadway or paved parking lot, the owner and/or operator of the property from which the deposition eroded shall implement both of the following control measures. Exceedances of the opacity limit, due to erosion-caused deposition of bulk materials onto paved surfaces, shall constitute a violation of the opacity limit.</p> <p>a. Remove any and all such deposits by utilizing the appropriate control measures within 24 hours of the deposits' identification or prior to the resumption of traffic on pavement, where the pavement area has been closed to traffic; and</p> <p>b. Dispose of deposits in such a manner so as not to cause another source of fugitive dust.</p>
Maricopa County	Rule 310 § 308.3 Trackout, Carry-Out, Spillage, and/or Erosion	<p>Trackout control required for (1) all work sites with a disturbed surface area of one acres or larger., and (2) all work sites where 100 cubic yards of bulk materials are hauled on-site and/or off-site per day.</p> <ul style="list-style-type: none"> • Immediately, or within 30 minutes, clean up trackout that exceeds 50 feet, all other trackout must be cleaned up at the end of the workday; and implement one of the following control measures: • At all access points, install a grizzly or wheel wash system • At all access points, install a gravel pad at least 30 feet wide, 50 feet long, and 6 inches deep • Pave starting from the point of intersection with a paved area accessible to the public and extending for a centerline distance of at least 100 feet and a width of at least 20 feet
San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD)	Rule 8041	<p>An owner/operator shall sufficiently prevent or cleanup carryout and trackout</p> <ul style="list-style-type: none"> • The use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout on public roads is expressly prohibited. • remove all visible carryout and trackout at the end of each workday. • Within urban areas, if carryout and trackout extends less than 50 feet from the nearest exit point of a site, the owner/operator shall remove all visible carryout and trackout at the end of each workday.
Clark Co., Nevada	AQR 94 & Construction Activities Dust Control Handbook	<ul style="list-style-type: none"> • Clean up mud and dirt track out at least once daily and when track out extends more than 50 feet • Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect: (1) Install gravel pad(s) consisting of 1" to 3" rough diameter, clean, well graded gravel or crushed rock. Minimum dimensions must be 30 feet wide by 3 inches deep, and, at minimum, 50' or the length of the longest haul truck, whichever is greater. Re-screen, wash, or apply additional rock in gravel pad to maintain effectiveness; or (2) Install and maintain wheel shakers; or (3) Install and maintain wheel washer.
Washoe County, Nevada	District Board of Health Regulations Governing Air Quality Management 040.030 Dust Control	<p>6. Paved entry aprons or other effective cleaning techniques (e.g., wheel washers), shall be required by the Control Officer, if determined necessary, to prevent tracking onto paved roadways. Paved entry aprons may include road sections of coarse aggregate or steel grate to "knock off" dirt which accumulates on the vehicle and/or vehicle wheels.</p> <p>Any material which is tracked onto a paved roadway must be removed (swept or washed) as quickly as safely possible. Exceptions to this provision may be made by the Control Officer for the construction, maintenance, and/or repair of paved roadways and for the application of de-icing and traction materials for wintertime driving safety.</p>
Coachella Valley,	Final 2002 Coachella	Proposed specific work practices to be incorporated into the revised dust control ordinance:

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Trackout Control		
Agency	Preliminary Identified Affected Rules	Requirements
CA	Valley PM10 SIP, June 2002	<ul style="list-style-type: none"> Track-out control device (washed gravel pad at least 30 feet wide, 50 feet long, and six inches deep, paving starting from the point of intersection with a paved public roadway and extending for a centerline distance of at least 100 feet and a width of at least 20 feet, wheel shaker device or wheel wash system) required for construction projects greater than or equal to five acres or those that import/export greater than or equal to 100 cubic yards per day. Additional track-out control devices may be considered during program implementation. Regardless of project size or track-out control device selected, material tracked-out onto a paved public or private road must be removed at anytime it extends more than 25 feet from a site entrance (approximate width of two travel lanes) and at the conclusion of the work day.
SCAQMD, California	403(d)(5)	<p>(5) Any person in the South Coast Air Basin shall:</p> <p>(A) prevent or remove within one hour the track-out of bulk material onto public paved roadways as a result of their operations; or</p> <p>(B) take at least one of the trackout control options listed below and:</p> <p>(i) prevent the track-out of bulk material onto public paved roadways as a result of their operations and remove such material at anytime track-out extends for a cumulative distance of greater than 50 feet on to any paved public road during active operations; and</p> <p>(ii) remove all visible roadway dust tracked-out upon public paved roadways as a result of active operations at the conclusion of each workday when active operations cease.</p> <p><u>Track out control options:</u></p> <p>(1) Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.</p> <p>(2) Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Bulk Material Hauling and Transporting		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	Maricopa County Rule 310 Table 13 Bulk Material Hauling/Transporting	<p>Within the boundaries of the work site when crossing a paved area accessible to the public while construction is underway</p> <p>a. An owner and/or operator must implement all of the following control measures:</p> <ol style="list-style-type: none"> 1. Load all haul trucks such that the freeboard is not less than 3 inches when crossing a paved area accessible to the public while construction is underway; 2. Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); 3. Install a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of haul trucks and/or motor vehicles that traverse such work site; 4. Spray material with water prior to loading and spray material with water while loading. <p>b. Suggested additional control measure for contingency plans:</p> <ol style="list-style-type: none"> 1. Limit vehicle speeds to 15 m.p.h. on the work site. <p>When on-site within the boundaries of the worksite but not crossing a paved area accessible to the public</p> <p>a. An owner and/or operator must implement one of the following control measures:</p> <ol style="list-style-type: none"> 1. Limit vehicular speeds to 15 miles per hour or less while traveling on the work site; 2. Apply water to the top of the load in compliance with Section 301 of this rule; or 3. Cover haul trucks with a tarp or other suitable closure. <p>Off-site hauling and transporting onto paved areas accessible to the public</p> <p>a. An owner and/or operator must implement all of the following control measures:</p> <ol style="list-style-type: none"> 1. Cover haul trucks with a tarp or other suitable closure; 2. Load all haul trucks such that the freeboard is not less than 3 inches; 3. Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and 4. Before the empty haul truck leaves the site, clean the interior of the cargo compartment or cover the cargo compartment.
Clark County, Nevada	Construction Activities Dust Control Handbook – Truck Loading; Importing/Exporting Soil, Rock and Other Bulk Material	<ul style="list-style-type: none"> • Ensure all loads are covered prior to leaving the construction site and traveling on public roadways. • Limit visible dust opacity from vehicular operations: apply water and limit vehicle speeds to 15 mph on the work site, or apply and maintain dust suppressant on haul roads. • Check bell-dump truck seals regularly and remove any trapped rocks to prevent spillage • Maintain 3-6 inches of freeboard to minimize spillage • Stabilize materials during transport on site by using tarps or other suitable enclosures on haul trucks or stabilize materials with water. • Clean wheels and undercarriage of haul trucks prior to leaving construction site.

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Bulk Material Hauling and Transporting		
Agency	Preliminary Identified Affected Rules	Requirements
TCEQ	TAC §111.143. Materials Handling.	<p>Applies in El Paso and portions of Harris and Nueces Counties:</p> <p>No person may cause, suffer, allow, or permit any material, except for abrasive material for snow and ice control, to be handled, transported, or stored without taking at least the following precautions to achieve maximum control of dust emissions to the extent practicable:</p> <p>(3) Application of water or suitable chemicals, or complete covering of materials contained in open-bodied trucks, trailers, or railroad cars transporting such materials which can create airborne particulate matter in areas where the general public has access.</p> <p>(A) Suitable wetting may be used as an alternative to covering in all areas except the City of El Paso.</p> <p>(B) Complete covering, at a minimum, is required in the City of El Paso.</p>
Washoe County, Nevada	District Board of Health Regulations Governing Air Quality Management 040.030 Dust Control	<p>5. Any vehicle operating on a paved roadway with a load of dirt, sand, or gravel susceptible to being dropped, spilled, leaked or otherwise escaping therefrom, must take one of the following control measures:</p> <p>a. Six (6) inches of freeboard is maintained within the bed of the vehicle. For the purposes of this regulation, "freeboard" means the vertical distance from the highest portion of the edge of the load to the lowest part of the rim of the truck bed.</p> <p>b. Materials contain enough moisture to control dust emissions from the point of origin to their final destination. Wherever possible, the use of dust suppressants must be applied in conjunction with the water.</p> <p>c. In the event that measures A or B are ineffective in preventing materials from escaping, tarps or other cargo covers shall be employed. This section does not prohibit a public maintenance vehicle from depositing sand on a paved roadway to enhance traction, or sprinkling water or other substances to clean or maintain a highway.</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Open Areas and Vacant Lots		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	310.01 Fugitive Dust From Open Areas, Vacant Lots, Unpaved Parking Lots, And Unpaved Roadways	<p><u>§ 301 Vehicle Use In Open Areas And Vacant Lots</u>: require implementation of one of the following control measures for open areas and vacant lots 0.10 acre or larger (4,360 square feet) and have a cumulative of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles:</p> <p>a. Prevent motor vehicle and/or off-road vehicle trespassing, parking, and/or access, by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures.</p> <p>b. Uniformly apply and maintain surface gravel or chemical/organic stabilizers to all areas disturbed by motor vehicles and/or off-road vehicles.</p> <p><u>302 Open Areas And Vacant Lots</u>: require implementation of one of the following control measures within 60 calendar days following the initial discovery of the disturbance for open areas and vacant lots have 0.5 acre or more (21,780 square feet) of disturbed surface area and remain unoccupied, unused, vacant, or undeveloped for more than 15 days:</p> <p>a. Establish vegetative ground cover on all disturbed</p> <p>b. Apply a dust suppressant to all disturbed surface areas</p> <p>c. Restore all disturbed surface areas such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions.</p> <p>d. Uniformly apply and maintain surface gravel</p>
Clark Co., Nevada	Clark County June 2001, PM10 SIP, Appendix L, p. L-11.	SIP commitment to hire ten new enforcement department staff members to implement enforcement for “wind erosion – vacant land, unpaved parking and race tracks”
Clark Co., Nevada	Section 90.2.1.1(a) & (b)	<p>Owner/operator required to implement controls for open areas and vacant lots 5,000 square feet or larger, such as:</p> <ul style="list-style-type: none"> • Prevent motor vehicle access and stabilize disturbed surface. • Stabilize disturbed surface greater than 5,000 square feet with gravel or dust palliatives
Coachella Valley, California	Final 2002 Coachella Valley PM10 SIP, June 2002	<p>Proposed, revised dust control ordinance:</p> <p>Owners/operators of vacant lands with disturbed surfaces greater than or equal to 5,000 square feet are required to either</p> <p>1) prevent trespass by installing physical barriers such that a surface crust is developed, or</p> <p>2) treat the disturbed surfaces such that a surface crust is formed. Treatment options include uniform application and maintenance of two inches of washed gravel or chemical/organic dust suppressants to all disturbed areas at a level sufficient to develop and maintain a surface crust.</p> <p>When an owner/operator has applied physical access restrictions and an acceptable surface crust has not been established, treatment of disturbed vacant lands with greater than or equal to 5,000 square feet will be required unless such treatments are considered technically unfeasibility.</p>
SCAQMD, California	403(d)(1)	<p>Disturbed areas must be controlled to prevent visible emissions from crossing the property line.</p> <p>Rule 403 Implementation Handbook – Disturbed Surface Areas/Inactive Construction Site Best Available Control Measures</p> <p>(Q) chemical stabilization – (1) Most effective when used on areas where active operations have ceased;</p> <p>(2)Vendors can supply information on methods for application and required concentrations.</p>

		<p>(R) Watering – (1) Requires frequent applications unless a surface crust can be developed.</p> <p>(S) Wind fencing – (1) Three- to five-foot barriers with 50% or less porosity adjacent to roadways or urban areas can be effective in reducing the amount of wind blown material leaving a site. Must be used in conjunction with either measure (Q), (R), or (T).</p> <p>(T) Vegetation – (1) Establish as quickly as possible when active operations have ceased.</p> <p><u>High Wind Measures</u></p> <p>a. apply chemical stabilizers (to meet the specifications established by the Rule); or</p> <p>b. apply water to all disturbed surface areas 3 times per day.</p>
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Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Paved Roads		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	1999 Serious Area PM10 Plan for the Maricopa County Nonattainment Area, pp. 7-158 & 7-271	<p>PM10 efficient street sweepers - allocate \$3.8 million CMAQ funds to encourage the purchase and utilization of PM10 efficient street sweepers (50% street sweeper fleet turnover by 2006)</p> <p><u>Frequent Routine Sweeping or Cleaning of Paved Roads</u> - City of Phoenix conducts routine sweeping of residential and major streets. The street sweeping schedule will be changed to coordinate sweeping with the uncontained trash pick-up during the 1997-1998 fiscal year. The City will continue to consider new street sweeping equipment which may be designed to reduce particulate emissions and/or to increase sweeping efficiency. ADOT has responsibility for maintenance of facilities on the State Highway System. Street sweeping is accomplished through intergovernmental agreements, private contracts, and ADOT personnel. Sweeping is conducted in various frequencies.</p>
Clark County, Nevada	AQR § 93.2.2; AQR § 93.2.2.1 AQR § 93.2.3	<ol style="list-style-type: none"> 1. After January 1, 2001, require purchase of PM-efficient street sweepers for paved road and paved parking lot sweeping. 2. The use of dry rotary brushes and blower devices for the removal of dirt, rock, or other debris from a paved road or paved parking lot is prohibited without the use of sufficient wetting to limit the visible emissions to no greater than 20% opacity
Clark County, Nevada	Clark County, June 2001, PM10 SIP, Appendix J	<p>Established Street Sweeping Frequency for Paved Roads</p> <ul style="list-style-type: none"> Clark County Public Works – All classes of roads are swept every 7 to 10 days City of Las Vegas – all classes of roads are swept every 2 weeks. Problem areas, such as roads around active construction sites, are swept more frequently, typically once per week. City of North Las Vegas – all roads are swept twice monthly State of Nevada – All freeways in Clark County are swept once a week; All arterials under state jurisdiction in Clark County are swept once a month.
SCAQMD, California	Rule 1186 (e)(1)(A)	Any government or government agency which contracts to acquire street sweeping equipment or street sweeping services for routine street sweeping on public roads that it owns and / or maintains, where the contract date or purchase or lease date is January 1, 2000 or later, shall acquire or use only certified street sweeping equipment.
Texas Commission on Environmental Quality (TCEQ)	TAC §111.147. Roads, Streets, and Alleys.	<p>Applies in El Paso and portions of Harris and Nueces Counties.</p> <p>No person may cause, suffer, allow, or permit any public, industrial, commercial, or private road, street, or alley to be used without taking at least the following precautions to achieve control of dust emissions:</p> <p>(2) Removal from public thoroughfares, as necessary, of soil or other materials, except for sand applied for the specific purpose of snow or ice control. In the City of El Paso, removal of soil shall be by mechanical sweepers or their equivalent at the rate of four times per year for all public thoroughfares within the city limits and six times per year or as necessary for public thoroughfares within the central business district. For the purpose of this section, the central business district shall be defined as that area bordered by Loop 375 to the south, Santa Fe Street to the west, Missouri Street to the north, and Kansas Street to the east. The City of El Paso shall spot clean dirty roadways, and shall maintain street sweeping records for two years. Sand applied for the specific purpose of snow or ice control shall be removed as soon as such control is no longer necessary.</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Unpaved Haul/Access Roads		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	310 § 302.2 310 § 302.2 310 § 308.4 & Table 3	<p><u>Work practice requirements</u></p> <p>Implement one or more of the following controls:</p> <ol style="list-style-type: none"> 1. Limit vehicle speed to 15 mph and limit vehicular trips to no more than 20 per day; 2. Apply water, so that the surface is visibly moist; 3. Pave; 4. Apply and maintain gravel, recycled asphalt, or other suitable material; 5. Apply a suitable dust suppressant <p><u>Stabilization requirements</u></p> <ul style="list-style-type: none"> • Ensure visible fugitive dust emissions do not exceed 20% opacity, and • Ensure silt loading is less than 0.33 oz/ft², or silt content does not exceed 6 percent. • As an alternative to meeting the stabilization requirements, limit vehicle trips to no more than 20 per day per road and limit vehicle speeds to no more than 15 mph.
Clark County, Nevada	AQR 94 and Construction Activities Dust Control Handbook – Traffic – Unpaved Routes and Parking Areas	<ul style="list-style-type: none"> • Limit visible dust opacity from vehicular operations by either limit vehicle speeds to 15 mph or apply and maintaining dust palliative on all vehicle travel areas. • Stabilize all haul routes and maintain in a stabilized condition by applying water; dust palliative; gravel; or supplement dust palliative or aggregate applications with watering, if necessary. • Stabilize all off-road and parking areas and maintain in a stabilized condition by applying water; gravel; recycled asphalt (or other suitable material); dust palliative (designed for vehicle traffic). <p>Recommendations: Use of bumps or dips for speed control is encouraged. Apply paving as soon as possible to all future roadway areas for PEP categories other than “high”</p>
TCEQ	Concrete Batch Plant Technical Guidance for Mechanical Sources, January 2001, Draft	<p>Best Available Control Technology Analysis - Current control practices include:</p> <p>6. 70 to 95% control of fugitive dust emissions from roads and traffic areas (watering, wet or dry sweeping acceptable. It is important to note that in certain locations, paving may be required).</p> <p>These levels are guidelines to help the applicant get an idea of what the TCEQ is currently considering as BACT; however, these control levels are subject to change.</p>
TCEQ	Air Quality Standard Permit for Temporary Rock Crushers, February 2002	<p><u>(1) General Requirements</u></p> <p>(G) Dust emissions from all in-plant roads and active work areas that are associated with the operation of the crusher shall be minimized at all times by at least one of the following methods:</p> <ol style="list-style-type: none"> (i) covered with a material such as, but not limited to, roofing shingles or tire chips (when used in combination with (ii) or (iii) of this subsection); (ii) treated with dust-suppressant chemicals; (iii) watered; or (iv) paved with a cohesive hard surface that is maintained intact and cleaned.
TCEQ	February 2002, Standard Permit for Rock Crushing Plants, BACT Analysis	<p>3. The implementation of best management practices to reduce fugitive dust emissions from roads and traffic areas (water, application of environmentally safe chemicals, wet or dry sweeping, in certain locations paving may be required) as stated in the Special Conditions of the permit.</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Unpaved Haul/Access Roads		
Agency	Preliminary Identified Affected Rules	Requirements
TCEQ	Air Quality Standard Permit For Hot Mix Asphalt Plants Effective Date July 10, 2003	<p>(1) <u>General Requirements</u> (U) For a production rate of less than or equal to 300 tph, stockpiles and vehicle traffic areas (except for entrance and exit to the site) shall be located at least 25 feet from any property line. For a production rate of greater than 300 tph, stockpiles and vehicle traffic areas (except for entrance and exit to the site) shall be located at least 50 feet from any property line. In lieu of meeting the distance requirements for roads and stockpiles, the following shall occur: (i) roads and other traffic areas located less than the applicable distance requirement from the property line must be bordered by dust-suppressing fencing or barriers. The fencing or barriers shall be constructed to a height of at least 12 feet; and (ii) if any portion of a stockpile is located less than the applicable distance requirement from the property line, then the entire stockpile must be contained within a three-walled bunker which extends at least two feet above the top of the stockpile.</p> <p>(3) Requirements Specific to Temporary Hot Mix Asphalt Plants (F) In order to maintain compliance with subsection (1)(H), emissions from all in-plant roads and traffic areas associated with the operation of the hot mix asphalt plant shall be minimized at all times by at least one of the following methods. In-plant roads and traffic areas shall be: (i) covered with a material such as, but not limited to, roofing shingles or tire chips (when used in combination with (ii) or (iii) of this subsection); (ii) treated with dust-suppressant chemicals; (iii) watered; or (iv) paved with a cohesive hard surface that is maintained intact and cleaned.</p> <p><u>(4) Requirements Specific to Permanent Hot Mix Asphalt Plants</u> (B) In order to maintain compliance with paragraph (1)(H), all entry and exit roads and main traffic routes associated with the operation of the hot mix asphalt plant (including batch truck and material delivery truck roads) shall be paved with a cohesive hard surface to be maintained intact and cleaned. All batch trucks and material delivery trucks shall remain on paved surfaces when entering, conducting primary function, and leaving the property. All other traffic areas must comply with the control requirements listed in paragraph (3)(F).</p>
TCEQ	TAC §111.147. Roads, Streets, and Alleys.	<p>Applies in El Paso and portions of Harris and Nueces Counties. No person may cause, suffer, allow, or permit any public, industrial, commercial, or private road, street, or alley to be used without taking at least the following precautions to achieve control of dust emissions: (1) Application of asphalt, water, or suitable oil or chemicals on the following unpaved surfaces, except in the City of El Paso and the Fort Bliss Military Reservation, except as noted in §111.141, where the use of paving materials is the only acceptable method of dust control, unless otherwise specified: (A) Industrial Facility Roadways – all major in-plant roads and all truck or other heavy-duty vehicle pathways. Major in-plant roads shall be defined as those which are designed to accommodate two-way traffic and are at least 30 feet wide at least one point, measuring the distance from the edge of the undisturbed earth on either side of the established roadway. The executive director, with the concurrence of the United States Environmental Protection Agency, may grant a waiver from the requirement to pave an</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Unpaved Haul/Access Roads		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>industrial facility roadway if the owner of the roadway demonstrates that the cost of paving is economically unreasonable compared to other methods of dust control specified in subsection (1).</p> <p>(B) Public Thoroughfares - all roads and streets to which the public has general access.</p> <p>(C) Commercial Roads - all roads which serve as access for more than 50 employees or as access to more than ten heavy-duty truck parking spaces.</p> <p>(D) Residential Roads - all roads which serve as access for more than 20 residences and/or apartment units.</p> <p>(E) Alleys - in the City of El Paso, alleys shall be paved at the rate of at least 15 miles per year.</p> <p>(F) Levee Roads - in the City of El Paso, all levee roads and access to such roads shall be controlled with the application of asphalt, or suitable oil or chemicals.</p>
TCEQ	Air Quality Standard Permit for Concrete Batch Plants, Effective Date July 10, 2003	<p><u>(3) General Requirements</u></p> <p>(E) Dust emissions from all in-plant roads and traffic areas associated with the operation of the concrete batch plant must be minimized at all times by at least one of the following methods:</p> <p>1. covered with a material such as, but not limited to, roofing shingles or tire chips (when used in combination with (ii) or (iii) of this subsection);</p> <p>(ii) treated with dust-suppressant chemicals;</p> <p>(iii) watered; or</p> <p>(iv) paved with a cohesive hard surface that is maintained intact and cleaned.</p> <p><u>(4) Additional Requirements for Concrete Batch and Specialty Batch Concrete, Mortar, Grout Mixing, or Pre-cast Concrete Products Plants</u></p> <p>(D) Except for incidental traffic, vehicles used for the operation of the concrete batch plant may not be operated within 25 feet of any property line, except for entrance and exit to the site. In lieu of meeting this distance requirement, roads and other traffic areas must be bordered by dust preventive fencing or other barrier along all traffic routes or work areas within the 25-foot specified buffer area. These borders shall be constructed to a height of at least 12 feet.</p> <p><u>(5) Additional Requirements for Temporary Concrete Plants</u></p> <p>(C) (iii) Stationary equipment, stockpiles, or vehicles used for the operation of the concrete batch plant (except for incidental traffic and the entrance and exit to the site) may not be located or operated, respectively, within the following specified distances from any property line:</p> <p>(iv) for those facilities with production rates less than or equal to 200 cubic yards per hour, at least 25 feet; and</p> <p>(v) for those facilities with production rates more than 200 and less than or equal to 300 cubic yards per hour, at least 50 feet.</p> <p>(D) In lieu of meeting the distance requirements for roads and stockpiles of (5)(C)(iii), the following may be followed:</p> <p>(i) roads and other traffic areas within the buffer distance must be bordered by dust suppressing fencing or other barrier along all traffic routes or work areas. These borders shall be constructed to a height of at least twelve (12) feet; and</p> <p>(ii) stockpiles within this buffer distance must be contained within a three-walled bunker which extends at least two (2) feet above the top of the stockpile.</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Unpaved Haul/Access Roads		
Agency	Preliminary Identified Affected Rules	Requirements
		<p><u>(6) Additional Requirements for Other Concrete Plants</u></p> <p>(C) All entry and exit roads and main traffic routes associated with the operation of the concrete batch plant (including batch truck and material delivery truck roads) shall be paved with a cohesive hard surface that can be maintained intact and shall be cleaned. All batch trucks and material delivery trucks shall remain on paved surface when entering, conducting primary function, and leaving the property. Other traffic areas must comply with the control requirements of paragraph (3)(E).</p> <p>(D) The following distance limitations must be met: (ii) stationary equipment, stockpiles, or vehicles used for the operation of the concrete batch plant (except for incidental traffic and the entrance and exit to the site) may not be located or operated, respectively, within the following specified distances from any property line: (iii) for those facilities with production rates less than or equal to 200 cubic yards per hour, at least 25 feet; and (iv) for those facilities with production rates more than 200 and less than or equal to 300 cubic yards per hour, at least 50 feet.</p> <p>(E) In lieu of meeting the distance requirements for roads and stockpiles of (5)(C)(ii), the following may be followed: (i) roads and other traffic areas within the buffer distance must be bordered by dust suppressing fencing or other barrier along all traffic routes or work areas. These borders shall be constructed to a height of at least 12 feet; and (ii) stockpiles within this buffer distance must be contained within a three-walled bunker which extends at least two feet above the top of the stockpile.</p>
San Joaquin Valley Air Pollution Control District (SJVAPCD)	Rule 8071 Unpaved Vehicle/Equipment Traffic Areas	<p>5.1 In addition to the requirements of this rule, a person shall comply with all other applicable requirements of Regulation VIII to limit Visible Dust Emissions (VDE) to 20% opacity.</p> <p>5.1.1 On each day that 75 or more vehicle trips will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall limit VDE to 20% opacity from the unpaved vehicle/equipment traffic area by application and/or maintenance of at least one of the following control measures, or shall implement an APCO-approved Fugitive PM10 Management Plan as specified in Rule 8011 (General Requirements):</p> <p>5.1.1.1. Watering;</p> <p>5.1.1.2 Uniform layer of washed gravel;</p> <p>5.1.1.3. Chemical/organic dust suppressants;</p> <p>5.1.1.4. Vegetative materials;</p> <p>5.1.1.5. Paving;</p> <p>5.1.1.6. Any other method that effectively limits VDE to 20% opacity.</p> <p>5.1.2 On each day that 100 or more vehicle trips will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall limit VDE to 20% opacity and comply with the requirements of a stabilized unpaved road by the application and/or maintenance of at least one of the following control measures, or shall implement an APCO-approved Fugitive PM10 Management Plan as specified in Rule 8011 (General Requirements):</p> <p>5.1.2.1 Watering;</p> <p>5.1.2.2 Chemical/organic stabilizers/suppressants in accordance with the manufacturer's specifications;</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Unpaved Haul/Access Roads		
Agency	Preliminary Identified Affected Rules	Requirements
		5.1.2.3 Roadmix; 5.1.2.4 Paving. 5.1.2.5 Any other method that results in a stabilized unpaved road surface.
Florida	Florida Administrative Code 62-296.414 Concrete Batching Plants.	<p>The following requirements apply to new and existing emissions units producing concrete and concrete products by batching or mixing cement and other materials. This rule also applies to facilities processing cement and other materials for the purposes of producing concrete.</p> <p>(2) Unconfined Emissions. The owner or operator shall take reasonable precautions to control unconfined emissions from hoppers, storage and conveying equipment, conveyor drop points, truck loading and unloading, roads, parking areas, stock piles, and yards as required by Rule 62-296.320(4)(c), F.A.C. For concrete batching plants the following shall constitute reasonable precautions:</p> <p>(a) 1. Paving and maintenance of roads, parking areas, and yards.</p> <p>(a) 2. Application of water or environmentally safe dust-suppressant chemicals when necessary to control emissions</p> <p>(a) 3. Removal of particulate matter from roads and other paved areas under control of the owner or operator to mitigate reentrainment, and from building or work areas to reduce airborne particulate matter.</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Stockpiles/Storage Piles		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	Rule 310 § 308.7 & Table 12	<p><u>Work Practices</u></p> <p>Owner/operator shall comply with both of the following:</p> <p>a. During stacking, loading, and unloading operations, apply water, as necessary, to maintain compliance with 20 % opacity limit; and</p> <p>b. When not conducting stacking, loading, and unloading operations, comply with one of the following work practices:</p> <p>(1) Cover open storage piles with tarps, plastic, or other material to prevent wind from removing the coverings;</p> <p>(2) Apply water to maintain a soil moisture content at a minimum of 12%;</p> <p>(3) Meet one of the stabilization requirements (visible crust; 100 cm/second threshold friction velocity; 50% flat vegetative cover; 30% standing vegetative cover;; 10% standing vegetative cover and 43 cm/second threshold friction velocity; 10% non-cover of non-erodible elements); or</p> <p>(4) Construct and maintain wind barriers, storage silos, or a three-sided enclosure with walls, whose length is no less than equal to the length of the pile, whose distance from the pile is no more than twice the height of the pile, whose height is equal to the pile height, and whose porosity is no more than 50%.. If implementing this subsection, subsection 308.6(b)(4), the owner/operator must also implement either (2) or (3) above.</p> <p><u>Control Measures</u></p> <p>Owner/operator must implement one of the following control measures:</p> <p>1. Maintain with at least 70% optimum moisture content; or</p> <p>2. Stabilize open storage piles at completion of activity by following any of the following work practices:</p> <ul style="list-style-type: none"> • Water open storage piles to form a crust immediately at the completion of activity; • Construct and maintain wind barriers, storage silos, or a three-sided enclosure with walls, whose length is no less than equal to the length of the pile, whose distance from the pile is no more than twice the height of the pile, whose height is equal to the pile height, and whose porosity is no more than 50%. • Cover open storage piles with tarps, plastic, or other material such that the coverings will not be dislodged by wind. <p><u>Suggested additional control measures for contingency plans</u></p> <p>1. Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.</p> <p>2. Remove material from the downwind side of the storage pile when safe to do so.</p>
Clark County, Nevada	AQR 94.8.4 & 94.8.5 and Construction Activities Dust Control Handbook - Stockpiling	<ul style="list-style-type: none"> • Stockpiles located within one hundred (100) yards of occupied buildings shall not be constructed over eight (8) feet in height [AQR § 94.8.4]. • Stockpiles over eight (8) feet in height shall have a road bladed to the top to allow water truck access or shall have a sprinkler irrigation system installed, used and maintained [AQR § 94.8.4]. • To the extent possible, maintain stockpile to avoid steep sides.

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Stockpiles/Storage Piles		
Agency	Preliminary Identified Affected Rules	Requirements
		<ul style="list-style-type: none"> • Stabilize surface soils where support equipment and vehicles will operate by pre-watering and maintaining surface soils in a stabilized condition; or by applying and maintaining a dust palliative on surface soils • Stabilize stockpile materials during handling by maintaining stockpile materials with at least 70% optimum moisture content or removing material from the downwind side of the stockpile, when safe to do so. • Based on soil type apply water; water and tackifier mixture; or water and surfactant mixture during stacking, loading and unloading operations. • Stabilize stockpiles at completion of activity by either watering stockpiles to form a crust immediately at the completion of activity; apply and maintain a dust palliative to all outer surfaces of the stockpiles; provide and maintain wind barriers on 3 sides of the pile, whose length is no less than equal to the length of the pile, whose distance from the pile is no more than twice the height of the pile, whose height is equal to the pile height, and made of material with a porosity of 50% or less; or apply a cover or screen to stockpiles.
TCEQ	Air Quality Standard Permit for Temporary Rock Crushers, February 2002	<p>(H) All stockpiles shall be sprinkled with water, dust-suppressant chemicals, or covered, as necessary, to minimize dust emissions.</p> <p>(I) Raw material and product stockpile heights shall not exceed 45 feet.</p>
TCEQ	Air Quality Standard Permit For Hot Mix Asphalt Plants Effective Date July 10, 2003	(M) All stockpiles shall be sprinkled with water, dust-suppressant chemicals, or covered, as necessary, to minimize dust emissions.
TCEQ	Air Quality Standard Permit for Concrete Batch Plants, Effective Date July 10, 2003	<p>(3)(F) All stockpiles shall be sprinkled with water, dust-suppressant chemicals, or covered, as necessary, to minimize dust emissions.</p> <p>(5) <u>Additional Requirements for Temporary Concrete Plants</u></p> <p>C (iii) Stationary equipment, stockpiles, or vehicles used for the operation of the concrete batch plant (except for incidental traffic and the entrance and exit to the site) may not be located or operated, respectively, within the following specified distances from any property line:</p> <p>(iv) for those facilities with production rates less than or equal to 200 cubic yards per hour, at least 25 feet; and</p> <p>(v) for those facilities with production rates more than 200 and less than or equal to 300 cubic yards per hour, at least 50 feet.</p> <p>(D) In lieu of meeting the distance requirements for roads and stockpiles of (5)C(iii), the following may be followed:</p> <p>(i) roads and other traffic areas within the buffer distance must be bordered by dust suppressing fencing or other barrier along all traffic routes or work areas. These borders shall be constructed to a height of at least twelve (12) feet; and (ii) stockpiles within this buffer distance must be contained within a three-walled bunker which extends at least two (2) feet above the top of the stockpile.</p> <p>(6) <u>Additional Requirements for Other Concrete Plants</u></p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Stockpiles/Storage Piles		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>(D) The following distance limitations must be met:</p> <p>(ii) stationary equipment, stockpiles, or vehicles used for the operation of the concrete batch plant (except for incidental traffic and the entrance and exit to the site) may not be located or operated, respectively, within the following specified distances from any property line:</p> <p>(iii) for those facilities with production rates less than or equal to 200 cubic yards per hour, at least 25 feet; and</p> <p>(iv) for those facilities with production rates more than 200 and less than or equal to 300 cubic yards per hour, at least 50 feet.</p> <p>(E) In lieu of meeting the distance requirements for roads and stockpiles of (5)C(ii), the following may be followed:</p> <p>(i) roads and other traffic areas within the buffer distance must be bordered by dust suppressing fencing or other barrier along all traffic routes or work areas. These borders shall be constructed to a height of at least 12 feet; and</p> <p>(ii) stockpiles within this buffer distance must be contained within a three-walled bunker which extends at least two feet above the top of the stockpile.</p>
TCEQ	February 2002, Standard Permit for Rock Crushing Plants, BACT Analysis	1. A minimum of 70% reduction of fugitive dust emissions from stockpiling of aggregate material (sufficient application of water by sprays or fog rings).
Florida	Florida Administrative Code 62-296.414 Concrete Batching Plants.	<p>The following requirements apply to new and existing emissions units producing concrete and concrete products by batching or mixing cement and other materials. This rule also applies to facilities processing cement and other materials for the purposes of producing concrete.</p> <p>(2) Unconfined Emissions. The owner or operator shall take reasonable precautions to control unconfined emissions from</p> <p>hoppers, storage and conveying equipment, conveyor drop points, truck loading and unloading, roads, parking areas, stock piles, and yards as required by Rule 62-296.320(4)C, F.A.C. For concrete batching plants the following shall constitute reasonable precautions:</p> <p>(a) 4. Reduction of stock pile height or installation of wind breaks to mitigate wind entrainment of particulate matter from stockpiles.</p>
Wisconsin	Wisconsin Administrative Code NR 415.04	<p>(2) In addition to meeting the requirements of sub. (1), any direct or portable source located in an area identified in s. NR 415.035 (1); and any direct or portable source located near the areas whose aggregate fugitive dust emissions may cause an</p> <p>impact on the ambient air quality in the areas equal to or greater than an annual concentration of one microgram per cubic meter or a maximum 24-hour concentration of 5 micrograms per cubic meter, as determined by the analysis under ch. NR 401, shall meet the following RACT requirements:</p> <p>(a) Storage piles having a material transfer greater than 100 tons in any year are subject to the following requirements:</p> <p>1. Storage piles of material having a silt content of 5% to 20% shall be treated with water, surfactants, stabilizers or chemicals; draped; or enclosed on a minimum of 3 sides. Access areas surrounding storage piles shall be watered, cleaned or treated with stabilizers as needed to prevent fugitive dust</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Stockpiles/Storage Piles		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>from vehicle traffic.</p> <p>2. Storage piles of materials having a silt content of 20% or more shall be completely enclosed or draped except any part being worked, loaded or unloaded. Access areas surrounding storage piles shall be watered, cleaned or treated with stabilizers as needed to prevent fugitive dust from vehicle traffic.</p>
SCAQMD	<p>Rule 403 (d)(1) & (h)(2). Rule 403 Implementation Handbook, January 1999, pp. 6-4.</p>	<p>1) A person shall not cause or allow the emissions of fugitive dust from any active operation, <u>open storage pile</u>, or disturbed surface area such that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source. Exemption for wind gusts exceeding 25 mph, high wind control measures are implemented. High wind measures for open storage piles- (a) apply water twice per hour; or (b) Install temporary coverings[SCAQMD Rule 403(d)(1) & (h)(2)].</p> <p>(2) A person conducting active operations within the boundaries of the South Coast Air Basin shall utilize one or more of the applicable best available control measures to minimize fugitive dust emissions from each fugitive dust source type which is part of the active operation.</p> <p><u>BACM for Storage Piles (Rule 403 Implementation Handbook):</u></p> <p><u>(L) Wind sheltering</u> - (1) enclose in silos; (2) Install three-sided barriers equal to height of material, with no more than 50 percent porosity.</p> <p><u>(M) Watering</u> - (1) Application methods include: spray bars, hoses and water trucks; (2) Frequency of application will vary on site-specific conditions.</p> <p><u>(N) Chemical stabilizers</u> - (1) Best for use on storage piles subject to infrequent disturbances</p> <p><u>(O) altering load-in/load-out procedures</u> - (1) Confine load-in/load-out procedures to leeward (downwind) side of the material. Must be used in conjunction with either measure (L), (M), (N), or (P).</p> <p><u>(P) Coverings</u> - (1) Tarps, plastic, or other material can be used as a temporary covering; (2) when used, these should be anchored to prevent wind from removing coverings.</p> <p>(4) A person shall not cause or allow PM₁₀ levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM₁₀ monitoring. (H)(4) - This provision shall not apply if the dust control actions are implemented on a routine basis for each applicable fugitive dust source type.</p>
Bay Area Air Quality Management District	<p>Best Available Control Technology (BACT) Guideline http://www.baaqmd.gov/pmt/bactworkbook/default.htm</p>	<p><u>Solid Material Storage – Enclosed:</u> Achieved in Practice - Vent to a baghouse w/ <0.01 gr/dscf; or water spray or adequate material moisture for wet material</p> <p><u>Solid Material Storage – Open:</u> Technologically Feasible/Cost Effective - Enclosed storage; Achieved in Practice - Water spray with chemical suppressants</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Non-stack: Material Handling		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	Maricopa County Rule 310 Table 11 Bulk Material Handling Operations	<p><u>Work Practices during stacking, loading and unloading operations:</u></p> <p>An owner and/or operator must implement all of the following control measures:</p> <ol style="list-style-type: none"> 1. Empty loader bucket slowly and keep loader bucket close to the truck to minimize the drop height while dumping; 2. Implement either one of the following control measures: <ol style="list-style-type: none"> a. Spray material with water prior to stacking, loading and unloading, and while stacking, loading, and unloading, or b. Spray material with a dust suppressant other than water prior to stacking, loading and unloading, and while stacking, loading, and unloading.
TCEQ	Permit by Rule §106.144. Bulk Mineral Handling.	<p>All bulk mineral product (except asbestos) handling facilities that operate in compliance with the following conditions of this section are permitted by rule.</p> <p>(1) All material shall be transported in a closed conveying system and all exhaust air to the atmosphere shall be vented through a fabric filter having a maximum filtering velocity of 4.0 feet per minute (ft/min) with mechanical cleaning or 7.0 ft/min with automatic air cleaning.</p> <p>(2) All permanent in-plant roads and vehicle work areas shall be watered, treated with dust-suppressant chemicals, oiled, or paved and cleaned as necessary to achieve maximum control of dust emissions.</p> <p>(3) The facility (including associated stationary equipment and stockpiles) shall be located at least 300 feet from any recreational area, school, residence, or other structure not occupied or used solely by the owner of the property upon which the facility is located.</p>
SCAQMD	BACT Guidelines for Non-Major Polluting Facilities	<p>Bulk Solid Material Handling – Other Dry Materials Handling (includes conveying, size reduction and classification)</p> <p>Enclosed Conveyors and Baghouse</p>
SJVAPCD	Rule 8031 Bulk Materials (adopted November 15, 2001)	<p>A. Handling/Storage Of Bulk Materials:</p> <p>A1 When handling bulk materials, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity.</p> <p>A2 When storing bulk materials, comply with the conditions for a stabilized surface as defined in Rule 8011; or</p> <p>A3 Cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or</p> <p>A4 Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If utilizing fences or wind barriers, control measure A1 shall also be implemented.</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Non-stack: Material Handling		
Agency	Preliminary Identified Affected Rules	Requirements
Florida	FAC 62-296.711 Materials Handling, Sizing, Screening, Crushing and Grinding Operations.	<p>(1) The emission limitations apply to the handling, sizing, screening, crushing, or grinding of the materials such as, but not limited to, cement, clinker, fly ash, coke, gypsum, shale, lime, sulfur, phosphatic materials, slag, and grain or grain products, including but not limited to the following types of operations:</p> <p>(a) Loading or unloading of materials to or from such containers as railcars, trucks, ships, and storage structures;</p> <p>(b) Conveyor systems other than portable conveyor systems;</p> <p>(c) Storage of materials in storage structures, such as silos or enclosed bins, which have a storage capacity of fifty cubic yards or more;</p> <p>(d) crushing and/or grinding operations;</p> <p>(e) sizing and/or rescreening operations;</p> <p>(f) static drop transfer points where the discharge point and receiving point of the materials being handled are not moving in relationship to one another.</p> <p>The emission limitations do not apply to emissions from materials handling, sizing, screening, crushing and grinding operations governed by Rule 62-296.705, F.A.C., Phosphate Process Operations or Rule 62-296.704, F.A.C., Asphalt Concrete Plants.</p> <p>(2) Emission Limitations.</p> <p>(a) No owner or operator of an emissions unit governed by Rule 62-296.711, F.A.C., shall cause, permit, or allow any visible emissions (five percent opacity) from such emissions unit except that at the point where material is being discharged to the hold of a ship from a conveyor system. When the conveyor and/or hatch covering is moved, an opacity of 10 percent will be allowed.</p> <p>(b) If, in order to comply with the requirements of paragraph (a) above, it is necessary to totally or partially enclose an operation and exhaust particulate laden gases through a vent or stack, emissions of particulate from such vent or stack shall not exceed 0.03 gr/dscf.</p>
TCEQ	Permit by Rule §106.148. Material Unloading.	<p>Railcar or truck unloading of wet sand, gravel, aggregate, coal, lignite, and scrap iron or scrap steel (but not including metal ores, metal oxides, battery parts, or fine dry materials) into trucks or other railcars for transportation to other locations is permitted by rule, provided the following conditions of this section are met.</p> <p>(1) Bulk materials shall not be stored on-site.</p> <p>(2) Water sprays or the equivalent must be installed and used as necessary at material handling operations to achieve maximum control of dust emissions.</p> <p>(3) All permanent in-plant roads and vehicle work areas shall be watered, treated with dust-suppressant chemicals, oiled, or paved and cleaned as necessary to achieve maximum control of dust emissions.</p>
TCEQ	TAC §111.143. Materials Handling.	<p>Applies in El Paso and portions of Harris and Nueces Counties:</p> <p>No person may cause, suffer, allow, or permit any material, except for abrasive material for snow and ice control, to be handled, transported, or stored without taking at least the following precautions to achieve maximum control of dust emissions to the extent practicable:</p> <p>(1) Application of water or suitable chemicals or some other covering on materials stockpiles and other surfaces which can create airborne dusts.</p> <p>(2) Installation, maintenance, and proper use of hoods, fans, and filters to enclose, collect, and clean the emissions of dusty materials</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Non-stack: Material Handling		
Agency	Preliminary Identified Affected Rules	Requirements
Bay Area Air Quality Management District	Best Available Control Technology (BACT) Guideline http://www.baaqmd.gov/pmt/bactworkbook/default.htm	<u>Solid Material Handling – Dry:</u> Achieved in Practice - Enclosure of size reduction and classification equipment, conveyors, and associated material transfer points and vent to baghouse(s) w/ <0.01 gr/dscf

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Concrete Batch		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	316 Nonmetallic mineral mining & processing § 303 Limitations – Concrete Plants and Bagging Operations	No person shall discharge or cause or allow to be discharged into the ambient air: § 303.1 Stack emissions exceeding 7% opacity. § 303.2 Fugitive dust emissions exceeding 10% opacity from any affected operation or process source, excluding truck dumping directly into any screening operation, feed hopper or crusher. § 303.3 Fugitive dust emissions exceeding 20% opacity from truck dumping directly into any screening operation, feed hopper or crusher.
TCEQ	Concrete Batch Plant Technical Guidance for Mechanical Sources, January 2001, Draft	Best Available Control Technology Analysis - Current control practices include: 1. All dry material storage silos equipped with fabric filter baghouses having a maximum outlet grain loading of 0.01 grains per dry standard cubic foot (gr/dscf). 2. All storage silos equipped with audible or visual warning devices to prevent overloading. 3. All aggregate material washed prior to delivery. 4. At least 70% control of fugitive dust emissions from the stockpiling and handling of aggregate material (this can be achieved by sufficient application of water by sprays or fog rings). 5. At least 95% control of dust emissions from the weigh hopper, mixer, and/or truck drop point (usually achieved by a baghouse and suction shroud). These levels are guidelines to help the applicant get an idea of what the TCEQ is currently considering as BACT; however, these control levels are subject to change.
TCEQ	Air Quality Standard Permit for Concrete Batch Plants, Effective Date July 10, 2003	<u>(3) General Requirements</u> A) All cement/flyash storage silos and weigh hoppers shall be equipped with a fabric or cartridge filter or vented to a fabric or cartridge filter system. (B) Fabric filters and collection systems shall meet all of the following: (i) any fabric or cartridge filter, any fabric or cartridge filter system, and any suction shroud shall be maintained and operated properly with no tears or leaks; (ii) All filter systems (including any central filter system) shall be designed to meet at least 0.01 outlet grain loading (grains/dry standard cubic foot); (iii) all filter systems, mixer loading, and batch truck loading emissions control devices shall meet a performance standard of no visible emissions exceeding 30 seconds in any six-minute period as determined using U.S. Environmental Protection Agency (EPA) Test Method (TM) 22; and (iv) when cement or flyash silos are filled during non-daylight hours, the silo filter system exhaust shall be sufficiently illuminated to enable a determination of compliance with the visible emissions requirement in (3)(B)(iii) of this permit. (C) Conveying systems for the transfer of cement/flyash shall meet all of the following: (i) conveying systems to and from the storage silos shall be totally enclosed, operated properly, and maintained with no tears or leaks; and (ii) these systems, except during cement/flyash tanker connect and disconnect, shall meet a performance standard of no visible emissions exceeding 30 seconds in any six-minute period as

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Concrete Batch		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>determined using EPA TM 22.</p> <p>(D) A warning device shall be installed on each bulk storage silo. This device shall alert operators in sufficient time prior to the silo reaching capacity during loading operations, so that the loading operation can be stopped prior to filling to such a level as to potentially adversely impact the pollution abatement equipment.</p> <p>(G) Spillage of materials used in the batch shall be immediately cleaned up and contained or dampened so that dust emissions are minimized.</p> <p><u>4) Additional Requirements for Concrete Batch and Specialty Batch Concrete, Mortar, Grout Mixing, or Pre-cast Concrete Products Plants</u></p> <p>(A) Site production shall not exceed 30 cubic yards per hour.</p> <p>(B) As an alternative to the requirement in paragraph (3)(A) of this section, the cement/flyash weigh hopper may be vented inside the batch mixer.</p> <p>(C) Dust emissions at the batch mixer feed shall be controlled by one of the following:</p> <p>(i) a spray device which eliminates visible emissions;</p> <p>(ii) a pickup device delivering air to a fabric or cartridge filter;</p> <p>(iii) an enclosed batch mixer feed such that no visible emissions occur; or</p> <p>(iv) conducting the entire mixing operation inside the enclosed process building such that no visible emissions from the building occur during mixing activities.</p> <p><u>(5) Additional Requirements for Temporary Concrete Plants</u></p> <p>A temporary concrete plant is one that occupies a designated site for not more than 180 consecutive days or supplies concrete for a single project, but no other unrelated projects.</p> <p>(A) Site production shall be limited to no more than 300 cubic yards per hour.</p> <p>(B) Dust control at the truck drop or mixing point shall comply with one of the following:</p> <p>(i) Facilities which occupy a site for less than 180 consecutive days and have production rates less than 200 cy/hr may load rotary mix trucks through a discharge spout equipped with a water fog ring having low-velocity fog nozzles spaced to create a continuous fog curtain that minimizes dust emissions. If a water fog ring is used at the truck drop point, the visible emissions limitations (and associated compliance determination methods) of subsection (3)(B)(3) and (4) must be met.</p> <p>(ii) All other facilities must use a suction shroud and fabric filter /cartridge filter system. The suction shroud or other pickup device shall be installed at the batch drop point (drum feed for central mix plants) and vented to a fabric or cartridge filter system with a minimum of 4,000 actual cubic feet per minute of air and must meet subsection (3)(B).</p> <p>(C) All of the following applicable distance limitations must be met. For concrete batch plants which supply concrete for a single public works project, the “property line” measurements for purposes of compliance with this standard permit and 30 TAC § 111.155 shall be made to the outer boundaries of the designated public property, roadway project and associated rights-of-way.</p> <p>(i) The suction shroud baghouse exhaust or truck drop point shall be located at least 100 feet from any</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Concrete Batch		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>property line. (ii) For those facilities with a water fog ring, the truck drop point shall be a minimum of 300 feet from the nearest non-industrial receptor.</p> <p><u>(6) Additional Requirements for Other Concrete Plants</u> (A) Site production shall be limited to no more than 300 cubic yard per hour. (B) A suction shroud or other pickup device shall be installed at the batch drop point (drum feed for central mix plants) and vented to a fabric or cartridge filter system with a minimum of 4,000 actual cubic feet per minute of air. (D) The following distance limitations must be met: (i) the suction shroud baghouse exhaust shall be at least 100 feet from any property line;</p>
Bay Area Air Quality Management District	<p>Best Available Control Technology (BACT) Guideline for Concrete Batch http://www.baaqmd.gov/pmt/bactworkbook/default.htm</p>	<p><u>< 5 cubic yards per batch</u> Achieved in Practice - Water spray for aggregate handling, aggregate storage piles, and site road surfaces; and enclosure and venting of cement handling and storage to baghouse w/ <0.01 gr/dscf</p> <p><u>=5 cubic yards per batch</u> Technologically Feasible/cost Effective - Water spray w/ chemical suppressants for aggregate handling and storage piles; and paving of site road surfaces; and enclosure and venting of cement handling and storage to baghouse w/ ≤0.0013 gr/dscf</p> <p>Achieved in Practice: Water spray for aggregate handling, aggregate storage piles, and site road surfaces; and enclosure and venting of cement handling and storage to baghouse w/ ≤0.01 gr/dscf</p>
Florida	Florida Administrative Code 62-296.414 Concrete Batching Plants.	<p>The following requirements apply to new and existing emissions units producing concrete and concrete products by batching or mixing cement and other materials. This rule also applies to facilities processing cement and other materials for the purposes of producing concrete.</p> <p>(1) Stack Emissions. Emissions from silos, weigh hoppers (batchers), and other enclosed storage and conveying equipment shall be controlled to the extent necessary to limit visible emissions to 5 percent opacity.</p> <p>(2) Unconfined Emissions. The owner or operator shall take reasonable precautions to control unconfined emissions from hoppers, storage and conveying equipment, conveyor drop points, truck loading and unloading, roads, parking areas, stock piles, and yards as required by Rule 62-296.320(4)(c), F.A.C. For concrete batching plants the following shall constitute reasonable precautions: (b) Use of spray bar, chute, or partial enclosure to mitigate emissions at the drop point to the truck.</p>
SCAQMD	BACT Guidelines for non-major polluting facilities	<p>Concrete batch plant Central mixed, < 5 cubic yards/batch – water spray Central mixed, = 5 cubic yards/batch – baghouse for cement handling and adequate moisture in aggregate Transit-mixed – baghouse venting the cement weigh hopper and the mixer truck loading station; and adequate aggregate moisture</p>
SCAQMD	2003 Air Quality Management Plan,	(Proposed) control measures that would establish prescriptive measures to control fugitive dust from area sources within aggregate facilities and cement plants as well as evaluate whether additional controls are

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Concrete Batch		
Agency	Preliminary Identified Affected Rules	Requirements
	Final Appendix IV-A: Stationary Source Control Measure – Aggregate and cement manufacturing operations	<p>necessary for the control of PM10 for sources at aggregate and cement manufacturing plant operations subject to Rules 404, 405, and 1112.1. Examples of fugitive dust control requirements include:</p> <ol style="list-style-type: none"> 1. Pre-application of water prior to material extraction 2. Application of chemical dust suppressants or establishment of vegetative ground cover to inactive disturbed areas. 3. Chemical treatment or paving of internal haul roads 4. Covering of materials conveyors and haul vehicles 5. Use of enclosures or hooding material at transfer points and screen operations. 6. Installation of wheel washing systems where haul vehicles exit the site.

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Asphalt Batch Plants		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	Rule 316 § 302 limitations - asphaltic concrete plants	No person shall discharge or cause or allow to be discharged into the ambient air: <ul style="list-style-type: none"> Stack emissions exceeding 20% opacity and containing more than 0.04 gr/dscf (90 mg/dscm) of particulate matter. Fugitive dust emissions exceeding 20% opacity from any other affected operation or process source.
Florida	FAC 62-296.704 Asphalt Concrete Plants	(1)The emission limitations apply to any facility used to manufacture asphalt concrete by heating and drying aggregate and mixing with asphalt cements, excluding unloading and storage of raw materials. (2) Emission Limitations. No owner or operator of an asphalt concrete plant shall cause, permit, or allow the emission of particulate matter in excess of 0.06 gr/dscf, or visible emissions the density of which is greater than 20 percent opacity.
Bay Area Air Quality Management District	Best Available Control Technology (BACT) Guideline http://www.baaqmd.gov/pmt/bactworkbook/default.htm	<u>Asphalt Batch Plant – Material Handling</u> 1. Technologically Feasible/ Cost Effective - Enclosure of conveyors, transfer points, size reduction and classification equipment, and vent to baghouse(s) w/ <0.01 gr/dscf; Water spray w/ chemical suppressants of storage piles; Paving of site road surfaces 2. Achieved in Practice - Water spray w/ chemical suppressants of materials on conveyors, transfer points, storage piles, and site road surfaces; Enclosure of size reduction and classification equipment and vent to a baghouse w/<0.01 gr/dscf <u>Asphalt (Hot Mix) Drum Mix Facilities</u> 2. Achieved in Practice - ≤0.01 gr/dscf
TCEQ	Air Quality Standard Permit For Hot Mix Asphalt Plants Effective Date July 10, 2003	This air quality standard permit authorizes the air emissions from the operation of hot mix asphalt plants that meet the conditions listed in section (1) and section (2) and either section (3) for temporary plant sites or section (4) for permanent plant sites. (1) <u>General Requirements</u> (A) For the purposes of this standard permit, a hot mix asphalt plant is defined as a facility that produces or will produce one or more of the following: standard hot mix asphalt, asphalt mixes made with Performance Grade (PG) binders, asphalt mixes made with crumb rubber, and pre-coat aggregate. (G) For all facilities that are authorized by this standard permit, aggregate materials (rock, sand, etc.) received at the plant site shall be used at that site and shall not be transported to another site unless the material is left from a temporary project and removed from the site when the plant vacates the site. The storage of raw aggregate materials at the site for use at other sites requires a separate authorization under 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification, 30 TAC Chapter 106, Permits by Rule, or other appropriate authorization. (H) Except for those periods described in 30 TAC § 101.201 Emissions Event Reporting and Recordkeeping Requirements and 30 TAC § 101.211 Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; visible fugitive emissions from recycled asphalt product (RAP) breakers, screens, transfer points on belt conveyors, stockpiles, work areas and any in-plant roads associated with the facility shall not leave the property for a period exceeding 30 seconds in any six-minute period

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States						
Industrial Stack and Non-stack: Asphalt Batch Plants						
Agency	Preliminary Identified Affected Rules	Requirements				
		<p>as determined by U.S. Environmental Protection Agency (EPA) Test Method (TM) 22.</p> <p>(I) The drum dryer exhaust shall be vented to, and controlled by, a properly sized fabric filter baghouse.</p> <p>(J) Lime and mineral fillers shall be transported and stored in a closed system and all exhaust air to the atmosphere shall be vented through a properly sized fabric filter. An operational overflow warning device shall be installed on each bulk storage silo to alert operators in sufficient time prior to the silo reaching capacity. Any overfilling of the silo resulting in failure of the abatement system, or visible emissions in excess of the requirements of subsection(1)(D) of this standard permit, must be documented and reported following the requirements of 30 TAC §§ 101.201 or 101.211, as appropriate.</p> <p>(K) Fabric filters and collection systems shall meet all of the following requirements:</p> <p>(i) all fabric filter systems shall be maintained and operated properly with no tears or leaks;</p> <p>(ii) before July 10, 2007 all drum dryer filter systems shall meet at least a front half outlet grain loading of 0.02 grains per dry standard cubic foot (gr/dscf) and a combined (front half and back half) total outlet grain loading of 0.04 gr/dscf;</p> <p>(iii) on and after July 10, 2007 all drum dryer filter systems shall meet at least a front half outlet grain loading of 0.01 grains per dry standard cubic foot (gr/dscf) and a combined (front half and back half) total outlet grain loading of 0.04 gr/dscf; and</p> <p>(iv) lime/mineral bulk storage silo(s) not vented to the drum dryer system shall vent to a fabric filter system designed to meet at least 0.01 outlet grain loading (combined front half and back half).</p> <p>(L) Except for those periods described in 30 TAC §§ 101.201 and 101.211, opacity of emissions from the lime silo fabric filter baghouse stack and/or the drum dryer stack shall not exceed 5 percent averaged over a six-minute period, and according to EPA TM 9.</p> <p>(N) Fuel for dryers and hot oil heaters shall be either:</p> <p>(i) pipeline sweet natural gas as defined in the 30 TAC Chapter 101, General Air Quality Rules, containing no more than 5 grains total sulfur and 0.2 grain hydrogen sulfide per 100 dscf;</p> <p>(ii) liquid petroleum gas;</p> <p>(iii) diesel fuel with a maximum sulfur content of 0.6 percent by weight;</p> <p>(iv) first-run No. 2 fuel oil with a maximum sulfur content of 0.6 percent by weight;</p> <p>(v) first-run No. 4 fuel oil with a maximum sulfur content of 0.6 percent by weight; or</p> <p>(vi) reclaimed industrial oil with a maximum sulfur content of 0.6 percent by weight.</p> <p>Reclaimed industrial oil shall meet all requirements specified in 40 CFR Part 279, Standards for the Management of Used Oil, and not contain more than a specific amounts of the</p> <p>O) The maximum mix temperature, at the discharge point of the drum, shall not exceed 325° F except:</p> <p>(i) when a PG binder requires a higher mix temperature, in which case the maximum mix temperature shall not exceed 350 F; or (ii) when crumb rubber mix, produced in compliance with section (5) of this standard permit, requires a higher temperature, in which case the maximum mix temperature shall not exceed 375 F; or (iii) during periods of start-up or shutdown, not surpassing 20 minutes.</p> <p>(P) The following materials, added at the plant at no more than the maximum concentration, are authorized by this standard permit</p> <table><tr><th>Description</th><th>Maximum Concentration</th></tr><tr><td>Hydrated Lime, Portland Cement, or Fly Ash</td><td>Not Applicable</td></tr></table>	Description	Maximum Concentration	Hydrated Lime, Portland Cement, or Fly Ash	Not Applicable
Description	Maximum Concentration					
Hydrated Lime, Portland Cement, or Fly Ash	Not Applicable					

Industrial Stack and Non-stack: Asphalt Batch Plants		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>Liquid Amine Antistrip Agents 2% by weight of liquid asphalt in the mix Styrene-Butadiene-Styrene 10% by weight of liquid asphalt in the mix Styrene-Butadiene Rubberized Latex 6% by weight of liquid asphalt in the mix RAP 50% displacement of aggregate</p> <p>(Q) Asphalt release agents that do not emit VOCs at ambient temperature, such as vegetable oil or surfactants, may be used.</p> <p>(R) The owner or operator shall not operate more than one truck load out point at any time.</p> <p>(S) The hot mix asphalt plant, and all its associated facilities (silos, conveyors, screens, RAP crushers and equipment), shall be located a minimum distance to the property line. This minimum property line distance is determined by utilizing the following table (Attachment A). If no site-specific data is available, a 0.5 volatility factor (-0.5) shall be used.</p> <p>(T) As an alternative to the distance requirements in (1)(S) of this a standard permit, a hot mix asphalt plant that restricts hours of operation of the truck load out to the period of time between one hour after sunrise and one hour before sunset and mix production and silo filling at the plant to a period of time between sunrise and one hour before sunset, the minimum distance to the property line shall be determined by using the following table (Attachment B). If no site-specific data is available, a 0.5 volatility factor (-0.5) should be used.</p> <p>(V) The hot mix asphalt plant and all associated facilities shall be located at least 550 ft. from any concrete batch plant, or rock crusher located on the same site. Additionally, any hot mix asphalt plant and all associated facilities shall be located at least 1300 ft. from any other hot mix asphalt plant located on the same site. If either of these distances cannot be met, then the hot mix asphalt plant authorized under this standard permit shall not operate at the same time as the concrete batch plant, rock crusher, or other hot mix asphalt plant.</p> <p>(4) <u>Requirements Specific to Permanent Hot Mix Asphalt Plants</u></p> <p>(A) This standard permit authorizes not more than the following facilities (as defined in 30 TAC Chapter 116.10(4)):</p> <ul style="list-style-type: none"> (i) cold feed bin(s); (ii) transfer conveyor(s); (iii) aggregate screen(s); (iv) a counter/parallel flow drum; (v) a RAP feed bin; (vi) a RAP conveyor; (vii) 90,000 gallons or less total asphalt binder storage in no more than three tanks with associated hot oil heaters; (viii) three, hot mix surge bin/storage silos; (ix) 90,000 gallons or less total fuel oil storage in no more than three tanks; (x) a liquid anti-strip tank (xi) a RAP breaker/crusher; (xii) a release agent application facility

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Asphalt Batch Plants		
Agency	Preliminary Identified Affected Rules	Requirements
		(xiii) a lime storage silo; (xiv) a mineral filler silo; and (xv) a fines storage silo. Equipment that is not a source of emissions does not require authorization.

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Nonmetallic Mineral Processing		
Agency	Preliminary Identified Affected Rules	Requirements
Maricopa County	316 Nonmetallic mineral mining & processing – Section 301 Limitations	No person shall discharge or cause or allow to be discharged into the ambient air: 301.1 Stack emissions exceeding 7% opacity and containing more than 0.02 gr/dscf of PM. 301.2 Fugitive dust emissions from any transfer point on a conveying system exceeding 7% opacity. 301.3 Fugitive dust emissions exceeding 15% opacity from any crusher. 301.4 Fugitive dust emissions exceeding 10% opacity from any affected operation or process sources, excluding truck dumping directly into any screening operation, feed hopper or crusher. 301.5 Fugitive dust emissions exceeding 20% opacity from truck dumping directly into any screening operation, feed hopper or crusher.
Clark County, Nevada	AQR Section 34 New Performance Standards for Nonmetallic Mineral Mining and Processing 34.2 Performance Standard	34.2.1 No owner or operator shall cause to be discharged into the atmosphere, from any grinding mill, screening equipment, bucket conveyor, belt conveyor, belt conveyor transfer point, bagging equipment, storage bin, enclosed truck and rail car loading station, any fugitive dust which exhibits greater than ten percent (10%) OPACITY for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period. 34.2.2 No owner or operator shall cause to be discharged into the atmosphere from any crusher fugitive dust which exhibits greater than fifteen percent (15%) opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period. 34.2.3 No owner or operator shall cause to be discharged into the atmosphere emissions from a stack or building vent which exhibits greater than seven percent (7%) opacity for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period.
SCAQMD	BACT Guidelines for non-major polluting facilities	<u>Non-metallic mineral processing – except rock or aggregate</u> <ul style="list-style-type: none"> baghouse for enclosed operations; water fog spray for open operations. This category includes conveying, size reduction, and classification. <u>Rock – aggregate processing</u> <ul style="list-style-type: none"> baghouse venting jaw crushers, cone crushers, and material transfer points adjacent to and after these items; and water sprays at other material transfer points.
Bay Area Air Quality Management District	Best Available Control Technology (BACT) Guideline for rock and aggregate processing http://www.baaqmd.gov/pmt/bactworkbook/default.htm	1. Technologically feasible/cost effective - Enclosure of jaw/cone crushers, screens, conveyors, and all material transfer points and vent to baghouse(s) w/ <0.01 gr/dscf; Water spray w/ chemical suppressants of storage piles and site road surfaces. 2. Achieved in practice - Enclosure of jaw/cone crushers, screens, and associated material transfer points and vent to baghouse(s) w/ <0.01 gr/dscf; Water spray of other transfer points, conveyors, storage piles, and site road surfaces
TCEQ	February 2002, Standard Permit for Rock Crushing Plants, BACT Analysis	1. A minimum of 70% reduction of fugitive dust emissions from the crushing, conveying, and stockpiling of aggregate material (sufficient application of water by sprays or fog rings). 2. A minimum of 70% reduction of fugitive dust emissions from all vibrating screens.

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Nonmetallic Mineral Processing		
Agency	Preliminary Identified Affected Rules	Requirements
TCEQ	Air Quality Standard Permit for Temporary Rock Crushers, February 2002	<p>This air quality standard permit authorizes crushing operations which meet all of the conditions listed in paragraph (1) and paragraph (2) for Tier I or paragraph (3) for Tier II.</p> <p><u>(1) General Requirements</u></p> <p>(A) For the purposes of this standard permit, a site is defined as one or more contiguous or adjacent properties which are under common control of the same person (or persons under common control).</p> <p>(B) When crushing concrete, the crusher and all associated sources (screens, transfer points on belt conveyors, material storage or feed bins, work areas that are only associated with the facility, or stockpiles) shall be located at least 440 yards from any structure used as a single family or multifamily residence, school, or place of worship.</p> <p>(C) All screen sides shall be enclosed and all conveyors shall be covered with a half-moon or equivalent enclosure that covers the top of the conveyor to minimize emissions.</p> <p>(D) Except for those periods described in 30 TAC §§ 101.6 and 101.7, no visible fugitive emissions shall leave the property from the crusher, associated sources, and in-plant roads associated only with the facility. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA Test Method 22.</p> <p>(5) Except for those periods described in 30 TAC §§ 101.6 and 101.7, opacity of emissions from any transfer point on belt conveyors or any screen shall not exceed 10 percent and from any crusher shall not exceed 15 percent, averaged over a six-minute period, and according to EPA TM 9.</p> <p>(F) Permanently mounted spray bars shall be installed at the inlet and outlet of all crushers, at all shaker screens, and at all material transfer points and used as necessary to maintain compliance with all commission regulations.</p> <p>(J) The crusher shall be equipped with a runtime meter.</p> <p>(O) The rock crusher and all associated facilities operating under this standard permit shall neither locate nor operate on the same site as any other rock crusher.</p> <p><u>(2) A Tier I crusher (portable rock crusher with a throughput of 125 tph or less) shall comply with paragraph (1) of this standard permit and all of the following:</u></p> <p>(A) The crusher shall not be located at a quarry or mine.</p> <p>C) The crusher and all associated sources shall be located no less than 200 ft. from the nearest property line.</p> <p>(D) The equipment authorized under this paragraph shall be limited to one primary crusher, two conveyors, and two screens.</p> <p>(E) The rock crusher and all associated sources operating under this standard permit shall neither locate nor operate on the same site as any concrete batch plant or asphalt batch plant.</p> <p>(F) The crusher and associated sources (excluding stockpiles) shall not operate for more than 360 hours or 45 non-consecutive calendar days on site, whichever occurs first. The owner or operator shall remove the crusher and associated equipment from the site within 24 hours of ceasing operation. The 24 hours allotted for the removal shall not be used as additional operational time above the 360 hours or 45 non-consecutive calendar days.</p>

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Nonmetallic Mineral Processing		
Agency	Preliminary Identified Affected Rules	Requirements
		<p>(G) If the time periods listed in paragraph 2(F) have not been exhausted during any rolling 365 day period, the operator may return to the authorized site and operate for the remaining balance of time for that site. To return to the site, the operator shall notify the commission as described in paragraph 2(H). Once the operating hours (360) or calendar days (45) for the site have been exhausted and the site has been vacated, the owner or operator shall not use a standard permit to locate any rock crusher on the site for at least 365 days.</p> <p><u>(3) A Tier II crusher (portable rock crushers with a throughput of 250 tph or less) shall comply with paragraph (1) of this standard permit and all of the following:</u></p> <p>(B) The crushers and all associated sources shall be located no less than 300 ft. from the nearest property line.</p> <p>(C) The crushers and associated sources operating under this standard permit shall be located at least 550 ft. from any concrete batch plant or asphalt batch plant. If this distance cannot be met, then the crusher authorized under this standard permit shall not operate at the same time as the concrete batch plant or asphalt batch plant.</p> <p>(D) The equipment authorized under this paragraph shall be limited to one primary crusher, one secondary crusher, two screens and any associated conveyors.</p> <p>(E) The rock crushers and associated sources (excluding stockpiles) shall not operate for more than 1080 hours or 180 non-consecutive calendar days on site, whichever occurs first.</p>
Oklahoma DEQ	General Permit for Minor Source Nonmetallic Mineral Processing Facilities	<ul style="list-style-type: none"> • Facility-Wide Emissions Cap and Emissions Limitations - not to equal or exceed 100 TPY of any regulated pollutant, 10 TPY of any single HAP, or 25 TPY of all HAPs. • Facilities located in nonattainment areas are not eligible for general permit • Hourly PM Limits • Concentration Limitations for Engines • IC engines operated under this permit shall be fueled only with pipeline-quality natural gas or diesel with less than 4,000 ppm sulfur content. • 20% opacity limit • Reasonable precautions or measures to minimize fugitive dust emissions from the handling, transporting or disposition of any substance or material • Permittee shall not cause or permit the discharge of any visible fugitive dust emissions beyond the permittee's property line in such a manner as to damage or to interfere with the use of adjacent properties, or to cause or contribute to the violation of ambient air quality standards. • Fugitive road dust shall be controlled as needed to maintain by applying water and/or chemical spray to the road. • Water/chemical spray dust suppression systems on nonmetallic minerals processing equipment and transfer points must be operated on either a continuous or intermittent basis, depending on whether processed materials contain sufficient moisture such that operation of the plant does not cause a violation of applicable limitations.

Table 2: Controls Identified in Other State Implementation Plans or in Practice in Other States		
Industrial Stack and Non-stack: Ground Level Concentrations		
TCEQ	Rule §111.155. Ground Level Concentrations, Adopted June 16, 1989 Effective July 18, 1989	No person may cause, suffer, allow, or permit emissions of particulate matter from a source or sources operated on a property or from multiple sources operated on contiguous properties to exceed any of the following net ground level concentrations: (1) Two hundred micrograms per cubic meter of air sampled, averaged over any three consecutive hours. (2) Four hundred micrograms per cubic meter of air sampled, averaged over any one-hour period.
Agricultural Operations , Cropland and Non-cropland		
Arizona Department of Environmental Quality	AAC R18-2-610 and 611	Commercial farmers in the Maricopa PM10 nonattainment area must implement at least one best management practice for each of the following categories: 1) Cropland 2) Noncropland 3) Tillage and harvest activities

J:\AQD\PLANNING\SIPs\pm10\Yuma\proposed NEAP\BACM-MSM LIST.doc

APPENDIX H

Stakeholders Working with ADEQ on the Development of BACM



Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 W. Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.adeq.state.az.us



Stephen A. Owens
Director

AGENDA

Yuma PM10 SIP/Maintenance Plan
Stakeholder Meeting
City of Yuma Public Works Training Room
155 West 14th Street, Suite A
Yuma, Arizona 85364
Wednesday, June 4, 2003, 1:30 p.m.

1. Welcome and Introductions – Nancy Wrona, Director, Air Quality Division
2. Presentation and Discussion on 2001 Monitoring Data – Theresa Rigney, Unit Manager, Special Projects Unit, Assessment Section
3. Overview of EPA's Response to ADEQ's Letter of April 7, 2003 – Nancy Wrona
4. Presentation and Discussion on Natural Events Action Plan – Theresa Pella, Manager, Planning Section
5. Next Steps – Nancy Wrona

For additional information call Andra Juniel, ADEQ Air Quality Division, at 1-800-234-5677, Ext. 771-4417.

For special needs accommodation, please contact Greg Ferguson, at (928) 373-9432.

This document is available in alternative formats by contacting ADEQ TDD phone number at (602) 771-4829.

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Arizona Department of Environmental Quality
Air Quality Division

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SUBJECT YUMA PM10 NEAP/MAINTENANCE PLAN DATE JUNE 4, 2003

	<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>	<u>E-MAIL</u>
1.	C. D'AVEA	Improvement District 66	928 783 9308		
2.	GARY WHITE	COCOPAH	627-2025 x914	627-3115	
3.	GEORGE McCONAUGHEY				GLMCCON@AOL.COM
4.	Gil Guillory	MCAS Yuma	928-265-2782	5216	
5.	PAT CUPPELL	ADOT	(602) 912-6722	(602) 912-3096	pcuppell@dot.state.az.us
6.	JEFF DAVIS	MCAS YUMA/URS	(714) 433-7720	(714) 433-7701	
7.	David Rodriguez	MCAS Yuma	928 269-3161	5216	rodriquez@yuma.usmcg
8.	Marie Stewart	MCAS Yuma	928-269-6669	5216	stewartm@yuma.usmcg

9. Alan Quintero Yuma County #329-2300
10. Larry Hunt YMPO
11. ROGER McGRANE YEWKA
12. Luis Mercedia Congressman David M. Lujan
13. ART Allon FARM Bureau
14. Edna La Shoop City of Yuma Council
15. Edmundo Mendez City of Somerton
16. Joyce Robeck The Seem
17. Wilhelmina Thomas Cocopah Tribe 627-2025 EXT 14
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23. David Shays Yuma Farm Bureau/Welter McLowh NRCD

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Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Stephen A. Owens
Director

AGENDA

Yuma PM10 SIP/Maintenance Plan
Stakeholder Meeting
City of Yuma Public Works Training Room
155 West 14th Street, Suite A
Yuma, Arizona 85364
Wednesday, November 5, 2003, 1:30 p.m.

-
1. Welcome and Introductions – Nancy Wrona, Director, Air Quality Division
 2. Overview of Monitoring Data for August, 2002 – Steve Peplau, Manager, Assessment Section
 3. Presentation and Discussion on the Yuma Natural Events Action Plan (NEAP) Inventory and Modeling – Steve Peplau
 4. Discussion on Approaches to Control Measures Development – Theresa Pella, Manager, Planning Section
 5. Overview of NEAP Public Education/Notification Component – Theresa Pella and Patrick Gibbons, Manager, Office of Communications
 6. Next Steps – Nancy Wrona

For additional information call Andra Juniel, ADEQ Air Quality Division, at 1-800-234-5677, Ext. 771-4417.

For special needs accommodation, please contact Greg Ferguson, at (928) 373-9432.

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Air Quality Division

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SUBJECT YUMA PM₁₀ NEAP MEETING DATE NOVEMBER 5, 2003

	<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>	<u>E-MAIL</u>
1.	<u>Linda Blackman</u>		<u>928-819-0141</u>		<u>keephackman@aol.com</u>
2.	<u>PAT CARROLL</u>	<u>ADCT</u>	<u>(602) 917-6732</u>	<u>(602) 917-3046</u>	<u>pcarroll@adct.org</u>
3.	<u>Roger Oyle</u>	<u>BLM</u>	<u>(928) 317-3273</u>	<u>(928) 317-3250</u>	<u>roger_oyle@blm.gov</u>
4.	<u>Phyllis Johnson</u>	<u>City of Yuma</u>	<u>(928) 313-5000</u>	<u>(928) 313-5095</u>	
5.	<u>Gil Gillispie</u>	<u>NIOS</u>	<u>(928) 269-2272</u>	<u>(928) 269-2216</u>	
6.	<u>Royce Romero</u>	<u>Imperial County APCD</u>	<u>(760) 482-4606</u>		<u>royce.romero@imperialcounty.net</u>
7.	<u>Gail Gallagher</u>	<u>Yuma County P32</u>	<u>(928) 329-2300</u>		
8.	<u>David Rodriguez</u>	<u>NIOS Yuma</u>	<u>928-259-3161</u>	<u>5016</u>	<u>romed@yuma.gov</u>

9. Marie Stewart NEAS Unit 928-269-6669 x 5216 stewartm@yuma.usmc.mil
10. Theresa Pella ADEQ 602-771-2325
11. ART Allon Farm Bureau 343-9270
12. Lucy Shipp Yuma County 329-2104 lucyshipp@aol.com
13. CURT EGSTEN RURAL METRO FD 343-0568
14. Roger Petersen Yuma County 329-2300
15. BRIAN O'GREEN YUMA COUNTY HEALTH 317-4584
16. Willaden Thomas Cocopah Tribe 627-2025 xt 14
17. Gary WHITE Cocopah 627-2025 xt. 14
18. KENORE STUART BOS 329-2104
19. Jennifer Albare COY-DCD 373-5130
20. Gary Burroughs COY 373-4500
21. Ernesto Rodriguez YCPW 341-2500
22. Ema La Sloop City of Yuma Council 373-5002

23. JEFF DENMAN City of Yuma 373-5095 One City Plaza, Yuma
24. Robert Tolley Bureau of Reclamation 373-8151 7301 Calle Agua Salada
25. Larry Hunt YMPC 783 8911 502 S. Church
26. LeRoy Zachar Pasquinelli Produce Co. 783-7813 P.O. Box 2949
5578 S. Ave 374
27. Dwight Sharp Farm Bureau 785-9338 Roll, etc. 842
28. Edmundo Mendez City of Somerton 928-627-4115 P.O. Box 638
Somerton AZ 85350
29. Gregg Roach The Sun 928-539-6853
30. Benny Baggett U of A 726-3804 2200 W 28th St
Yuma
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Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Stephen A. Owens
Director

AGENDA

Yuma PM10 Natural Events Action Plan
Stakeholder Meeting
City of Yuma Public Works Training Room
155 West 14th Street, Suite A
Yuma, Arizona 85364

Wednesday, December 3, 2003, 1:30 p.m.

1. Welcome and Introductions – Nancy Wrona, Director, Air Quality Division
2. Status of Reviews for Agricultural Control Measures and Street Sweepers – Theresa Pella, Manager, Planning Section
3. Status of Reviews for Dust Control Plans of the Yuma Area Jurisdictions – Mark Lewandowski, Unit Manager, SIP and Program Development Unit
4. Status of Reviews for Covering Haul Trucks in the Yuma Area – Mark Lewandowski
5. Status of Review for ADEQ Permitted Sources – Nancy Wrona
6. Next Steps – Nancy Wrona

For additional information call Andra Juniel, ADEQ Air Quality Division, at 1-800-234-5677, Ext. 771-4417.

For special needs accommodation, please contact Greg Ferguson, at (928) 373-9432.

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Air Quality Division

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SUBJECT YUMA PM₁₀ NEAP MEETING

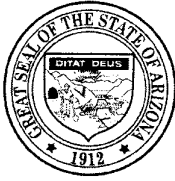
DATE DECEMBER 3, 2003

	<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>	<u>E-MAIL</u>
1.	<u>Linda Blackman</u>		<u>928-819-0441</u>		
2.	<u>MARIE STEWART</u>	<u>MCAS Yuma</u>	<u>928-209-6669</u>	<u>x5216</u>	<u>stewartm@yuma2.usmae.a</u>
3.	<u>Doug Hipp</u>	<u>COY</u>	<u>928-373-5179</u>	<u>373-5176</u>	<u>DOUG.HIPP@CI.YUMA.AZ.</u>
4.	<u>Gary Burrows</u>	<u>COY</u>	<u>928-373-4500</u>	<u>373-8852</u>	<u>GARY.BURROWS@CI.YUMA.AZ.US</u>
5.	<u>Phyllis Johnson</u>	<u>COY-Risk</u>	<u>928-313-5095</u>	<u>313-5094</u>	
6.	<u>Kacy Shipp</u>		<u>928-329-2104</u>		
7.	<u>John Gross</u>		<u>928-283-8911</u>	<u>329-1674</u>	<u>JGROSS@YUMA.CO.AZ.</u>
8.	<u>Roger Patterson</u>	<u>Yuma County</u>			

	<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>	<u>E-MAIL</u>
22.	OTMER & Lila Harper		342-7515		
23.	Erica Lee Shoop	Yuma City Council			
24.	Charles Ruerup	Yuma Proving Ground	328 2977		charles.ruerup@yuma.army.mil
25.	Vern Lee	HIS Development	342-1238		verne@theFootHillsonline.com
26.	Beth Donahue	Private citizen			
27.	Alden Chapely	Citizen	783-7448		achapely@aol.com
28.	Gary Trulson	Yuma Fire			Gary.Trulson@ci.yuma.az.us
29.	Art Allox	FARM Bureau	343-2407		ArtOAllox@aol
30.	Ross Hueb	Yuma Chamber	344-1467		RossHueb@cs.com
31.	Mike Donadek	Yuma Cottage	317-4584	317-4583	
32.	Lucy Shipp	Yuma County Board of Supervisors	329-2100	329-2001	
33.	Long Hunt	XMPO	783 8911		Lhunt@ympr.org
34.	Gary Burroughs	COY	783-4500		gary.burroughs@ci.yuma.az.us

24. JPMELCHIONNE PFUSA 342-5614 mel15@adelphia.net
25. RAY NAGY CBP 627 8817
26. PAUL BROOKER City of Yuma 373-4105
27. JEFF DENMAN City of Yuma 373-5000
28. LARRY NELSON " " 373 5001
29. Edmundo Mendez City of Lancaster 627-4115
30. Joyce Lopez VDS 539-6813
31. Mark Spencer 783-4491
32. Sheri France 314-1460
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	<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>	<u>E-MAIL</u>
35.	ROGER PATTERSON	Yuma County	329-2300		
36.	Paul Muthart	Pasquelli Produce	783-7813	343 4093	pmuthart@hotmail.com
37.	Ernest Padgett	Yuma Co Public Works	329-2306	317-5180	erpo@pw.co.yuma.Az
38.	Alex Gallan	City of Somerton	627-8866	627-3799	gallanalei@hotmail.com
39.	Dwight CLARK	Jason Assoc	328 3946	328 2585	dclark@jason.org
40.	Timothy Hoot	Timothy Hoot	373-5180	975-1111	Timothy.Hoot@jason.org
41.	Willadene Thomas	Cocopah Tribe	627-2025 ext 14	627-2025	
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Janet Napolitano
Governor

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Stephen A. Owens
Director

AGENDA

Yuma PM₁₀ Natural Events Action Plan
Stakeholder Meeting
Yuma County Public Works Facility
4343 51/2 E
Yuma, Arizona
Thursday, January 8, 2004, 1:30 p.m.

1. Welcome and Introductions – Nancy Wrona, Director, Air Quality Division
2. Review of the Yuma Natural Events Action Plan and Technical Support Document – Theresa Pella, Manager, Planning Section and Steve Peplau, Manager, Assessment Section
3. Next Steps – Nancy Wrona

For additional information call Andra Juniel, ADEQ Air Quality Division, at 1-800-234-5677, Ext. 771-4417.

For special needs accommodation, please contact Greg Ferguson, at (928) 373-9432.

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Arizona Department of Environmental Quality
Air Quality Division

Please Sign In

SUBJECT YUMA PM₁₀ NEAP MEETING DATE JANUARY 08, 2004

	<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>	<u>E-MAIL</u>
1.	<u>Rick Rademacher</u>	<u>Yuma Fresh Vegetable Assn</u>	<u>344-2983</u>	<u>726-1944</u>	<u>ratmalker@earthlink.net</u>
2.	<u>MONTY STANSBURY</u>	<u>YUMA COUNTY</u>	<u>928-329-2300</u>	<u>928-317-8302</u>	<u>MOSTC.DDS.CO.YUMA.AZ.U</u>
3.	<u>ROGER PATTERSON</u>	<u>YUMA COUNTY</u>	<u>" "</u>	<u>928-726-5626</u>	<u>rop@dds.co.yuma.az.</u>
4.	<u>LOU MIRANDA</u>	<u>yuma County</u>	<u>928-329-2300</u>	<u>928-726-5626</u>	<u>Lumi@dds.co.yuma.AZ.U.</u>
5.	<u>ART ALLEN</u>	<u>Yuma Farm Bureau</u>	<u>(928) 343-9270</u>	<u>343-2407</u>	<u>ARTOALLEN@AOL</u>
6.	<u>Harold Maxwell</u>	<u>Yuma County Farm Bureau</u>	<u>928 726-6500</u>	<u>928 726-4082</u>	<u>hmaxwell@sprynet.co</u>
7.	<u>Lucy Shipp</u>	<u>Yuma County</u>	<u>373-1010</u>	<u>373-1120</u>	
8.	<u>KENORE L. Stewart</u>	<u>Yuma County</u>	<u>373-1010</u>	<u>373-1120</u>	

- PHONE FAX EMAIL
9. GREG FERGUSON ADEQ SRQ YUMA 928 373 9432 373 9433 GSF@FV.SFPA
AZ.G
 10. Roger Oylex BLM YUMA (928) 317-3273 317-3250 Roger.Oylex@blm.gov
 11. Larry Hunt YMPC 928 783 8911 329 1674 lhunt@ympe.org
 12. Don Pope Yuma County Water Users Assn (928) 627-8824 (928) 627-3665 donpope@ycwa.org
 13. Tracie Shuman Bureau of Reclamation 928-343-8334 jsimes@ic.usbr.gov
(rep. Jack Simes) tshuman@ic.usbr.gov
 14. ROGER McGRANE YCWA (928) 627-8824 ext 332 (928) 627-3665 rmcgrane@ycwa.org
 15. Marcia Colquitt AZ DEPT OF AGRICULTURE (602) 542-3484 marcia.colquitt@ag.state.az.us
 16. Emma Lea Shoop City of Yuma Council 373-5002 Emma.La.Shoop@ci.yuma.az.us
 17. Ernesto Rodriguez Yuma County Public Works 928 341 2500 928 341 2550 erod@pw.co.yuma.az
 18. Francisco Soto City of Somerton Public Works 928-627-4115 - 928 627 5870
 19. IBRAHIM OSMAN CITY OF YUMA / P WORKS 373-4531 373-4501 Ibrahim.Osman@ci.yuma.az.us
 20. Sih Guillory MCAS Yuma, Env. Dept. 928-269-2282 269-5216 guillory@mcas.yuma.az.us
 21. DAVID Rodriguez MCAS Environmental Dept (928) 269-3161 (516) federiguez@yuma.wmc.org
 22. Sheryl Christenson Yuma Conservation Garden Inc Laguna NRE 928 317-1935 Sheryl.Christenson@az.usda.gov

			Ph. #	Fx. #
23.	Gary White	Cocopah TRIBE	(928) 627-2025 xt. 14	(928) 627-3115
24.	Phyllis Johnson	City of Yuma - Risk Mgt	(928) 373-5095	(928) 373-5094
25.	MARIE STEWART	MCAS YUMA	(928) 269-6669	(928) 269-5216
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APPENDIX I

NEAP Public Hearing Documentation

Section I.1	Notice of Public Hearing
Section I.2	Public Hearing Agenda
Section I.3	Public Hearing Sign In Sheet
Section I.4	Public Hearing Officer Certification and Transcript
Section I.5	Public Comments
Section I.6	Response to Comments

Section I.1

Notice of Public Hearing

Publisher's Affidavit of Publication

oOo

STATE OF ARIZONA }
COUNTY OF YUMA }

PUBLIC NOTICE
Arizona Department of
Environmental Quality
Public Hearing
On the Proposed Yuma Natural
Events Action Plan

The Arizona Department of Environmental Quality (ADEQ) will hold a public hearing to receive comments on a proposed Yuma Natural Events Action Plan (NEAP) and Technical Support Document (TSD) resulting from a PM10 Exceedance on August 18, 2002. The NEAP consists of documentation and analysis of the high wind natural event, a description of the public education and other programs to minimize public exposure to high concentrations of PM10 due to future natural events, modeling results which identify the sources of wind-generated PM10 in the Yuma area, and a commitment to identify and implement control measures to mitigate the significant PM10 sources that caused the exceedance. The TSD discusses several aspects of PM10 concentrations in Yuma, particularly the elevated PM10 concentration on August 18, 2002, and the emission sources which contributed to this concentration.

The public hearing will be held on Friday, February 13, 2004, at 4:00 p.m., City of Yuma Public Works Training Room, Suite A, 155 West 14th Street, Yuma, Arizona 85364. Interested parties will be given an opportunity at the public hearing to submit relevant comments, data, and views, orally and in writing. The close of the comment period will be 5:00 p.m. on Friday, February 13, 2004. Written comments must be received at ADEQ by that time to be considered for the final NEAP and TSD, which must be submitted to EPA by February 18, 2004.

Written comments should be addressed, faxed, or e-mail to: Andra Juniel, Air Quality Planning Section, Arizona Department of Environmental Quality, 1110 W. Washington Street, 3415A-3, Phoenix, AZ 85007, PHONE: (602) 771-4417, FAX: (602) 771-2366, E-Mail: juniel.andra@ev.state.az.us

Copies of the proposed plan are available for review beginning Tuesday, January 13, 2004, at the following locations:

Arizona Department of Environmental Quality Library, First Floor, 1110 W. Washington Street, Phoenix, Arizona 85007, Attn: Lorraine Cona, (602) 771-4335,
City of Yuma Public Works Department, 155 W. 14th Street, Yuma, Arizona 85364, Attn: Greg Ferguson, (928) 373-9432,
Yuma County Library, 350 3rd Avenue, Yuma, Arizona 85364, Attn: Brian Franssen, (928) 782-1871 Ext. 106, and
Somerton Library, 240 Canal Street, Somerton, Arizona 85350, Attn: Frances Murrietta, (928) 627-2149.
Daily January 13, 2004 #L2777

Julie Moreno or Lee Knapp, having been first duly sworn, deposes

and says: that The Sun is a newspaper of general circulation

published daily in the City of Yuma, County of Yuma, State of Arizona;

that (s)he is the publisher or business manager of said paper; that the

PUBLIC NOTICE

a printed copy of which, as it appeared in said paper, is hereto attached

and made a part of this affidavit, was published in The Sun

For ONE issues; that the date of the first

publication of said PUBLIC NOTICE

was JANUARY 13, 2004 and the date of the last publication

being JANUARY 13, 2004 and that the dates when said

PUBLIC NOTICE

was printed and published in said paper were

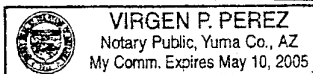
JANUARY 13, 2004

Lee Knapp
Subscribed and sworn to before me, by the said Julie Moreno or
Lee Knapp

15th day of January, 2004

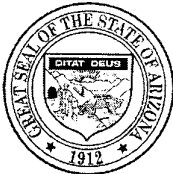
Virgen P. Perez Notary Public

My commission expires May 10, 2005



Section I.2

Public Hearing Agenda



Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.adeq.state.az.us



Stephen A. Owens
Director

ADEQ PUBLIC HEARING on PROPOSED YUMA NATUAL EVENTS ACTION PLAN AND PROPOSED TECHNICAL SUPPORT DOCUMENT

**MEETING LOCATION AND TIME:
City of Yuma Public Works Dept.**

***** Training Room, Suite A ***
155 West 14th Street
Yuma, Arizona 85364
Friday, February 13, 2004, 4:00 p.m.**

AGENDA

1. Welcome and Introductions – Cathy Jordan, ADEQ Air Quality Division, Public Hearing Officer
2. Overview of Proposed NEAP and Proposed TSD – Mark Lewandowski, Planning Section SIPS & Rules Unit Manager; Steve Peplau, Air Quality Division Assessment Section Manager
3. Questions and Answer Period – Cathy Jordan
4. Oral Comments Period – Cathy Jordan
(To comment, please take a speaker slip from the sign-in table and submit it to the Public Hearing Officer.)
5. Adjournment – Cathy Jordan

For additional information regarding this meeting, contact Andra Juniel at ADEQ by phone at (602) 771-4417, or e-mail at juniel.andra@ev.state.us. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Katie Huebner at ADEQ at (602) 771-4794. Requests should be made as early as possible to allow sufficient time to make the arrangements for the accommodation.

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Section I.3

Public Hearing Sign In Sheet



Arizona Department of Environmental Quality
Air Quality Division

Please Sign In

SUBJECT YUMA NATURAL EVENTS ACTION PLAN ORAL PROCEEDING DATE FEBRUARY 13, 2004

	<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>	<u>E-MAIL</u>
1.	LOU MIRANDA	YUMA County	329-2300	726-5626	LUMI@DDS.CO.YUMA.AZ
2.	Gail Gallagher	Yuma County	329-2300		GAGA@DDS.CO.YUMA.AZ
3.	Edmunds Mander	City of Suenita	627-4115	627-5830	eddm@cityofsuena.com
4.	Linda Blackman		819-0441		
5.	Emilia Shoop	City of Yuma Council	373-5002		Emilia.Shoop@cityofyuma.com
6.	Lucy Shipp	Yuma County	373-1010		
7.	Marie Stewart	MCAS YUMA	269-6669	269-5216	stewartm@yuma.gov
8.	Harold Maxwell	Yuma County Farm Bureau	726-8459		

9. Don Byrne Yuma County Water Users Association (928) 627-8824 (928) 627-3065 dougbyrne@ycwa.org
10. Ibrahim Osman City of Yuma (928) 373-4531 Ibrahim.Osman@ci.yuma.gov
11. Lenore Stuart Yuma Co. 373-1010
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
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- 21.
- 22.

Section I.4

Public Hearing Officer Certification and Transcript



Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 W. Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.adeq.state.az.us

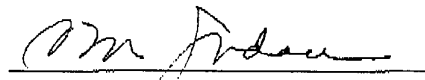


Stephen A. Owens
Director

Public Hearing Presiding Officer Certification

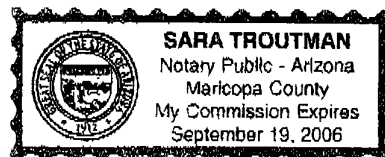
I, Cathy Jordan, the designated Presiding Officer, do hereby certify that the public hearing held by the Arizona Department of Environmental Quality was conducted on February, 13, 2004, at the City of Yuma Public Works Department, Yuma, Arizona, in accordance with public notice requirements by publication in the Yuma Daily Sun dated January 13, 2004. Furthermore, I do hereby certify that the public hearing was recorded from the opening of the public record through concluding remarks and adjournment, and the transcript provided contains a full, true, and correct record of the above-referenced public hearing.


Dated this 17th day of February 2004.


Cathy Jordan

State of Arizona)
) ss.
County of Maricopa)

Subscribed and sworn to before me by Sara Troutman this 17th day of February 2004




Notary Public

My commission expires:
September 19, 2006

Northern Regional Office
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86004
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400 West Congress Street • Suite 433 • Tucson, AZ 85701
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1 ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

2

3 IN THE MATTER OF THE PROPOSED)
4 YUMA NATURAL EVENTS ACTION PLAN) **PUBLIC HEARING**
5 (NEAP) AND TECHNICAL SUPPORT)
6 DOCUMENT (TSD) RESULTING FROM A)
7 PM10 EXCEEDANCE ON AUGUST 18,)
8 2002.)
9 _____)

7

8

9

10 At: Yuma, Arizona

11 Date: February 13, 2004

12 Filed: **FEB 17 2004**

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14

REPORTER'S TRANSCRIPT OF PROCEEDINGS

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ARIZONA REPORTING SERVICE, INC.

19

Court Reporting

Suite Three

20

2627 North Third Street

Phoenix, Arizona 85004-1126

21

By: KATHRYN A. BLACKWELDER
Certified Court Reporter
Certificate No. 50666

22 Prepared for:

23 **ADEQ**

24

ORIGINAL

25

1 BE IT REMEMBERED that the above-entitled and
2 numbered matter came on regularly to be heard before
3 the Arizona Department of Environmental Quality, at
4 the City of Yuma Public Works Training Room, Suite A,
5 155 West 14th Street, Yuma, Arizona, commencing at 4:01
6 p.m. on the 13th day of February, 2004.

7
8 BEFORE: CATHY JORDAN, HEARING OFFICER

9 APPEARANCES:

10 MARK LEWANDOWSKI, SIP and Rules
11 Unit Manager, on behalf of ADEQ;

12 STEVE PEPLAU, Assessment Section
13 Manager, on behalf of ADEQ;

14 ANDRA JUNIEL, Planner, Air Quality
15 Division, on behalf of ADEQ.

16 KATHRYN A. BLACKWELDER
17 Certified Court Reporter
18 Certificate No. 50666

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20

21

22

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25

1 HEARING OFFICER JORDAN: Good afternoon, and
2 welcome to this public hearing on the proposed Yuma
3 Natural Events Action Plan, or NEAP, and Technical
4 Support Document, or TSD. The hearing is now open.

5 The date is Friday, February 13th, 2004, and
6 the time is 4:01 p.m. The location is the City of Yuma
7 Public Works Training Room, Suite A, at 155 West 14th
8 Street, Yuma, Arizona 85364.

9 My name is Cathy Jordan. I'm a Planner in
10 the Air Quality Division, and I have been appointed by
11 the ADEQ Director to conduct this hearing.

12 The purposes of this hearing are to provide
13 the public an opportunity to hear about the substance
14 of the proposed Yuma NEAP and TSD, to ask questions
15 concerning the proposed NEAP and TSD, and to present
16 oral argument, data, and views concerning the proposed
17 NEAP and TSD in the form of comments on the record.

18 In addition to me, ADEQ Air Quality
19 representatives in attendance today are Steve Peplau on
20 the end, Assessment Section Manager in the Phoenix
21 office; Mark Lewandowski, SIP and Rules Unit Manager;
22 and Andre -- or, Andra, rather, Juniel, that's
23 J-u-n-i-e-l, a Planner in the Air Quality Division and
24 also Project Manager and Contact for the Yuma Natural
25 Events Action Plan process. Other ADEQ representatives

1 in attendance are Charlene Fernandez, new ADEQ
2 Community Liaison, Charlene; and Greg Ferguson, the
3 current ADEQ Community Liaison, Greg.

4 If you plan to make a public comment on the
5 record, the procedure is straightforward. You may have
6 noticed that speaker slips are available at the sign-in
7 table. Please complete a speaker slip and hand your
8 slip to me. Using speaker slips allows everyone an
9 opportunity to be heard and allows us to match the name
10 on the official record with the comments.

11 If you've not already submitted written
12 comments, you may submit them to me today in person.
13 The end of the comment period is 5:00 p.m. today,
14 Friday, February the 13th, 2004. If mailed, e-mailed,
15 or faxed, written comments must be received in the ADEQ
16 office in Phoenix by or before 5:00 p.m. today. Submit
17 your written comments to Andra Juniel, Air Quality
18 Planning Section, Arizona Department of Environmental
19 Quality, 1110, that's 1-1-1-0, West Washington Street,
20 Third Floor, Phoenix, Arizona 85007. The fax number is
21 area code 602-771-2366. Andra's e-mail address is
22 juniel.andra@ev.state.az.us.

23 State and federal laws require that comments
24 made during the formal comment period be considered by
25 ADEQ in preparation of the final NEAP and final TSD.

1 This is done through ADEQ's preparation of a
2 responsiveness summary, and final NEAP and TSD, in
3 which the Department responds in writing to written and
4 oral comments made during the formal comment period.

5 You may all have a copy of the agenda that
6 you got at the sign-in table. The agenda for this
7 hearing is simple. First, Mark Lewandowski will
8 present a brief overview of the proposed NEAP, and
9 Steve Peplau will present a brief overview of the
10 proposed TSD.

11 Second, I will conduct a question and answer
12 period. The purpose of the question and answer period
13 is to provide information that may help you in making
14 comments on the NEAP and TSD.

15 Third, I will conduct an oral comment period.
16 At that time, I will call speakers in the order in
17 which I have received their speaker slips.

18 Please be aware that any comments you make at
19 today's hearing that you want the Department to
20 formally consider must be given either in writing or on
21 the record during the oral comment period of this
22 proceeding.

23 At this time, Mark Lewandowski will give a
24 brief overview of the proposed Yuma NEAP. At the
25 conclusion of Mark's presentation, Steve Peplau will

1 give a brief overview of the TSD.

2 MR. LEWANDOWSKI: Thank you, Cathy.

3 I want to explain a little bit about the
4 document. The document has been on our Web site for
5 quite a while. It's at least a medium sized document,
6 and I'm just going to give a brief overview of the
7 first part of the document, which is the actual Natural
8 Events Action Plan.

9 Yuma, Arizona experienced an exceedance
10 of the 24-hour National Ambient Air Quality Standard
11 for particulate matter 10 microns or less, which we
12 call PM10, on August 18th, 2002. The Yuma area is
13 currently a moderate nonattainment area for PM10. We
14 had to change the plans that we had been making up to
15 that time. The August 18th, 2002 reading, therefore,
16 was flagged by ADEQ Staff as a natural or exceptional
17 event. The exceedance will not be considered a
18 violation and will not result in the Yuma area being
19 reclassified to serious as a nonattainment area if an
20 acceptable Natural Events Action Plan is developed, and
21 that's why we're proposing this document.

22 We're on a short time line. It's 18 months after
23 that August 18th exceedance, and that's basically
24 February 17th, and that's why we had to do this hearing
25 at what seems to be not exactly the best time.

1 ADEQ's analysis of wind data and other
2 information from August 18th indicates that the
3 exceedance was caused by high winds. ADEQ determined
4 that the exceedance was attributable to a high wind
5 natural event under EPA's 1996 Natural Events Policy
6 and under ADEQ's 1999 Air Quality Exceptional and
7 Natural Events Policy.

8 In addition to containing documentation and
9 analysis supporting a natural event determination, the
10 NEAP and the TSD, which means Technical Support
11 Document, contain ADEQ's commitment to do at least six
12 things. Number one, establish public notification and
13 education programs. Number two, minimize public
14 exposure to high concentrations of PM10 due to future
15 natural events. Number three, abate controllable
16 sources of PM10 to the extent feasible. Number four,
17 identify, study, and implement practical mitigating
18 measures as necessary. Number five, periodically
19 reevaluate the conditions causing a violation of the
20 PM10 standards in this area and the state of the
21 implementation of the Natural Events Action Plan, and
22 also reevaluate the adequacy of the actions that are
23 being implemented. And number six, document any
24 further natural events.

25 The Natural Events Action Plan for the Yuma

1 Moderate PM10 Nonattainment Area demonstrates the
2 commitments and other information necessary for a NEAP
3 under EPA's Natural Events Policy and under ADEQ's Air
4 Quality Exceptional and Natural Events Policy.

5 Completion of the Natural Events Action Plan
6 is the first step towards redesignating the Yuma
7 Nonattainment Area to attainment. The next step is the
8 completion of a maintenance plan for Yuma, which we
9 plan to submit to EPA in approximately January of 2005.

10 Steve can give a little bit more detail in terms
11 of what the Technical Support Document provides.

12 MR. PEPLAU: My name is Steve Peplau, I'm the
13 Manager of the Assessment Section for ADEQ. And I'm
14 just going to cover certainly some of the things that I
15 presented in some of our previous stakeholder meetings,
16 but also the detail of the data we analyzed for the
17 NEAP that occurred.

18 The TSD demonstrates and documents that the
19 PM10 24-hour average recorded on August 18th, 2002 was
20 the result of a regional-scale dust storm. The 24-hour
21 average PM10 concentration on this date was 170
22 micrograms per meter. The standard is 150 micrograms
23 per meter. Given the frequency of major dust storms in
24 Yuma and the one-day-in-six sampling frequency, dust
25 storms rarely produce exceedances of the PM10

1 standards. When this does occur, an EPA policy called
2 the Natural Events Policy can be used.

3 Before a Natural Events Action Plan can be
4 implemented, ADEQ must establish a clear causal
5 relationship between the measured exceedance and
6 meteorological conditions that qualify as a natural
7 exceptional event. The objective of this analysis is
8 to see whether the wind speeds and aridity associated
9 with the PM10 exceedance are extreme enough to qualify
10 the day as a natural exceptional event. There are
11 several requirements for a date to qualify, including
12 various air pollution monitoring requirements, a
13 determination of the sources contributing to the high
14 PM10 concentrations, requirements to notify the U.S.
15 Environmental Protection Agency, and meteorological
16 tests to see if the winds are extreme and the
17 conditions are dry enough.

18 The inventory of emission sources that
19 contributed to the exceedance of the PM10 standard on
20 August 18th, 2002 is contained in Section 6.0 of the
21 TSD. It was developed for the still to be submitted
22 Yuma PM10 Maintenance Plan. The inventory is for 1999
23 and 2016. And I understand that second year is
24 incorrectly noted as 2013 in the TSD document. It
25 should be 2016.

1 In constructing such an inventory, one first
2 makes an estimate of each important emission-causing
3 activity. Examples include the number of vehicle miles
4 driven on unpaved roads and number of acres of cotton
5 tilled, for example. EPA manuals and peer-reviewed
6 literature are used to obtain emission factors. An
7 example of an emission factor is the amount of PM10
8 pollution generated by each vehicle mile traveled on an
9 unpaved road. The activity level is multiplied by the
10 emission factor to produce the mass of emissions.

11 For modeling the August 18th, 2002
12 exceedance, a March 31st, 1999 emissions inventory was
13 used with the August 18th, 2002 meteorological data.
14 Pechan & Associates, ADEQ's contractor, had provided
15 the emissions inventory in October of 2002 to ADEQ for
16 use in the Industrial Source Complex Short Term
17 modeling project, and that's the EPA model that we use
18 to determine if methods work.

19 According to Pechan & Associates, the
20 inventory was suitable for the August date. The
21 model-predicted PM10 concentrations were examined for
22 the Yuma Juvenile Center, the actual monitoring site.
23 The predicted concentrations for the 24-hour average
24 were unrealistically high, principally because of the
25 uncertainty in estimating windblown emissions, but also

1 because of the uncertainty of simulating the emissions
2 with a dispersion log. Therefore, windblown emissions
3 were scaled down to better align the predicted
4 concentration with the measured air quality. This
5 scaling procedure was approved by both the U.S. EPA's
6 Region 9 and the Office of Air Quality Planning and
7 Standards.

8 The modeling results revealed that the most
9 important sources of windblown dust on August 18th,
10 2002 were agricultural fields, miscellaneous disturbed
11 areas, unpaved roads, urban disturbed areas, and
12 reentrained dust from paved roads and earthmoving dust
13 from construction activities. The purpose of the
14 proposed Yuma NEAP is to reduce PM10 emissions from the
15 principal sources that contributed to the exceedance to
16 the extent practicable. Regulatory efforts to reduce
17 PM10 emissions in Yuma will need to focus on these six
18 sources.

19 This concludes my overview. Cathy?

20 HEARING OFFICER JORDAN: Are there any
21 questions before we move to the question and answer
22 period?

23 This is the question and answer period here.
24 Do we have any questions?

25 MR. PEPLAU: We're opening up kind of an

1 informal question and answer period, if you have any
2 questions.

3 THE COURT REPORTER: Can I have everybody,
4 before they start speaking, just identify themselves
5 and spell their names for me?

6 MS. SHOOP: Ema Lea Shoop. E-m-a, capital
7 L-e-a S-h-o-o-p, City of Yuma City Council.

8 Question being, on December the 18th, when
9 all the stockholders were in attendance and there was
10 additions and deletions put into the draft, are those
11 still into the draft for the final document?

12 MR. PEPLAU: You mean the things that were
13 changed that were brought up at that meeting?

14 MS. SHOOP: Yes.

15 MR. PEPLAU: Yes.

16 MS. SHOOP: So we will see -- What was in
17 there as we marked up the draft at that time will be in
18 the clean copy that we'll see?

19 MR. PEPLAU: Correct.

20 MR. LEWANDOWSKI: They should be -- They
21 should be in there already.

22 MR. PEPLAU: I don't think there was a
23 problem with any of the things that were pointed out.
24 I think we pretty much modified based on the comments
25 we received.

1 MS. SHOOP: Thank you.

2 MR. FERGUSON: Mark just said --

3 MR. PEPLAU: Do you want to identify
4 yourself?

5 HEARING OFFICER JORDAN: Greg Ferguson.

6 MR. FERGUSON: Greg Ferguson, ADEQ.

7 When you said it should have been there
8 already, are you talking about that it was posted on
9 the Web site?

10 MR. PEPLAU: Right. Yes. We wouldn't have
11 put it on the Web site unless we had corrected the
12 document itself for the hearing.

13 HEARING OFFICER JORDAN: Anyone else?

14 Hearing no questions, this concludes the
15 question and answer period of this proceeding on the
16 proposed NEAP and Technical Support Document.

17 I now open this proceeding for oral comments.
18 If you have filled out speaker slips, may I have them
19 now? Any more speaker slips?

20 I have a speaker slip here from Lou Miranda,
21 that's L-o-u M-i-r-a-n-d-a, representing Yuma County --
22 Yuma County Department of Development Services. Would
23 you like to make an oral comment?

24 MR. MIRANDA: Yes. Thank you very much.

25 I appreciate the opportunity to speak with

1 you.

2 MR. PEPLAU: Could you stand up over here?

3 MR. MIRANDA: Sure.

4 Good afternoon, everyone. My name is Lou
5 Miranda. I am an environmental engineer, and I run the
6 environmental programs for Yuma County under the
7 Department of Development Services.

8 I have had the opportunity to review both the
9 Natural Events Action Plan and the Technical Support
10 Document, and what I have done here today is provide to
11 ADEQ some written comments in order to correct some of
12 the deficiencies that I have found throughout the
13 document. The majority of them are recommended
14 changes, but all in all, I think it will enhance the
15 overall composite of the document and will hopefully
16 make the document more readable and clear with some of
17 the additional corrections that were necessary. Thank
18 you very much.

19 HEARING OFFICER JORDAN: Thank you,
20 Mr. Miranda.

21 Is there anyone else who has an oral or
22 written comment at this point in time? Speaker slips?

23 MR. POPE: I assume we don't have to repeat
24 any of those we made at the last meeting?

25 HEARING OFFICER JORDAN: No. Well, if you've

1 already submitted a written comment, then we have that
2 and we will consider that. If you would like to make
3 an oral comment, please do so now on the record.

4 MR. POPE: Well, they were made last time on
5 the record.

6 MR. PEPLAU: Did you look at the document to
7 see if they were changed?

8 MR. POPE: One of the comments we made last
9 time was a little editorial about the water and so
10 forth.

11 MR. LEWANDOWSKI: Would you mind identifying
12 who you are just so we can --

13 MR. POPE: I'm Don Pope. I manage the Yuma
14 County Water Union Association.

15 THE COURT REPORTER: Can you spell your last
16 name, sir?

17 MR. POPE: Don Pope.

18 THE COURT REPORTER: P-o-p-e?

19 MR. POPE: P-o-p-e.

20 We made some comments on page 11 and page 32,
21 just policing type comments more than anything else
22 just to make the document accurate.

23 HEARING OFFICER JORDAN: We appreciate that.

24 Is there anyone else with a speaker slip?

25 This concludes the oral comment period of this

1 proceeding.

2 I encourage everyone to submit written comments
3 on the proposed NEAP and Technical Support Document.
4 Your participation is an essential part of the NEAP
5 process. Thank you for attending.

6 MS. SHIPP: Cathy, before you adjourn --

7 HEARING OFFICER JORDAN: Yes.

8 MS. SHIPP: Lucy Shipp, Chairman, Yuma County
9 Board of Supervisors, L-u-c-y S-h-i-p-p.

10 I just want to express our thanks, and I
11 think the whole community's thanks, for the fine work
12 that ADEQ has done on this for us.

13 HEARING OFFICER JORDAN: We really appreciate
14 that.

15 MS. SHIPP: We appreciate the effort and the
16 teamwork and the nonadversarial approach that we have
17 -- throughout this entire project.

18 HEARING OFFICER JORDAN: We really appreciate
19 your comment, and we really hope that we've been able
20 to benefit the community in the short-term and will be
21 able to benefit in the long-term

22 MS. SHIPP: The nicest thing is you guys come
23 to Yuma. Thank you.

24 HEARING OFFICER JORDAN: We love coming to
25 Yuma. Thank you very much.

1 MS. SHIPP: Anyway, we do thank you and we
2 appreciate you and we want you to know it's noticed.

3 HEARING OFFICER JORDAN: Well, we like you
4 down here. We appreciate your comment.

5 The time is now 4:25 p.m. I now close this
6 oral proceeding.

7 (The public hearing concluded at 4:25 p.m.)

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1 STATE OF ARIZONA)
2) ss.
3 COUNTY OF MARICOPA)
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7 I, KATHRYN A. BLACKWELDER, Certified Court
8 Reporter No. 50666 for the State of Arizona, do hereby
9 certify that the foregoing printed pages constitute a
10 full, true and accurate transcript of the proceedings
11 had in the foregoing matter, all done to the best of
12 my skill and ability.

13

14 WITNESS my hand this 15th day of February, 2004.

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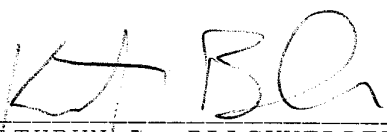
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KATHRYN A. BLACKWELDER
Certified Court Reporter
Certificate No. 50666

Section I.5

Public Comments



Yuma County, Arizona
DEPARTMENT OF DEVELOPMENT SERVICES

2703 S. Avenue B • Yuma, Arizona 85364

Harold Aldrich
Director
(928) 329-2300
FAX: (928) 726-5626

February 11, 2004

Nancy Wrona, Director Air Quality Division
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

Re: Yuma Natural Events Action Plan

Dear Ms. Wrona,

This letter is to provide written comments to the Arizona Department of Environmental Quality (ADEQ) after reviewing the proposed Yuma Natural Events Action Plan (NEAP) and Technical Support Document (TSD) resulting from a PM₁₀ Exceedance on August 18, 2002.

Please refer to Enclosure (1) for the recommended changes to the NEAP and the TSD.

If you have any questions regarding the recommended changes, please contact Mr. Luis Miranda, Yuma County Department of Development Services at 928-329-2300.

Sincerely,

Harold Aldrich
Director

Enclosure

lm

ADEQ COMMENTS FOR NATURAL EVENTS ACTION PLAN

Document	Page Number	ADEQ Written Statement	Recommended Document Changes
NEAP	2	III. EPA NEAP POLICIES AND REQUIREMENTS	Comment: pg. 13 reads NEAP POLICIES AND REQUIREMENTS; change document on page 2 to read the same.
NEAP	6	2002 PM ₁₀ Data Collected in Yuma AQS ID Number 04-027-004	Comment: Numbers do not match. Table IV 2 has AQS ID number as 04-027-0004. Please change ID number to reflect which number is correct.
NEAP	12	Employment Sector for Yuma County:2000	Comment: New profile for Yuma County is available on the Yuma County website.
NEAP	16	End of paragraph C.2. "in conjunction with the local planning agencies certified pursuant to...	Comment: recommend adding A.R.S. prior to paragraph symbol.
NEAP	19	Table IV-2 DATA COLLECTED IN YUMA	Comment: Data collected does not contain the data collected for 1 June 2002. The data must include sampling information for every six days, the information for 1 June 2002 is missing. Please include this data in the report.
NEAP	24	In the wind blown dust category, the modeling results showed.....	Comment: The data does not reflect the information listed in Figure VI-2. The text lists AG Fields at 17.7% the Figure shows 30%. Please correct either the text of the report or the figures.
NEAP	26	Figure V1-2	Comment: Figure should read VI-2 vice V1-2. Please replace the number 1 with an I.
NEAP	31	Figure VI-3 on page 27.	Figure VI-3 is on page 26 vice 27.
TSD	6	Table 3-1 Yuma monthly rainfall	Comment: Please state the source of your data.
TSD	9&10	analysis in Section 5 are shown in figure 4-3.	Comment: Figure 4-3 is placed in order before Figure 4-2, consider replacing order number sequence for figures.

ADEQ COMMENTS FOR NATURAL EVENTS ACTION PLAN

Document	Page Number	ADEQ Written Statement	Recommended Document Changes
TSD	15	Table 4-1	Comment: Table 4-1 is in Chapter 5. Consider changing title to Table 5-1 and changing information in text.
TSD	17	August 2002 exceedance is discussed in Section 7, page 22	Comment: Section 7 begins on page 23. Please change to correct page number.

ADEQ
AIR QUALITY DIVISION

4
08 FEB 12 AM 10:22

February 6, 2004

Andra Juniel
Arizona Dept. of Environmental Quality
1110 W. Washington
PHOENIX 85007

Dear Ms. Juniel,

I have read the Yuma NEAP that is posted on your website. It appears that the plan is seeking approval from the EPA. The plan is obviously trying to address the international air pollution problem here in Arizona. I have some questions and comments I would like to submit to your Agency for consideration.

First of all, do you have statistics as to how many Arizona residents live in the border communities in Arizona? The plan has made it clear that the Yuma area has experienced alarming growth over the last two decades. Is this population growth typical for the other border communities of Arizona? The study area includes parts of Mexico and California but the plan does not offer any population data for them.

Has your Agency done any health studies of respiratory illness of residents living along the U.S.-Mexico border in Yuma and other border communities in the state? Have you tracked the long-term health effects of high dust levels in Yuma? Is there a place where potential residents of the Yuma area can obtain data on the frequency of respiratory illness common in the Yuma area before moving there? What are the effects of suspended dust in the atmosphere on infants and small children? I would suggest that you organize some sort of warning system to alert people with pre-existing respiratory illnesses of high dust episodes like the one that occurred on August 18, 2002.

I have heard various claims that airborne dust particles often are laced with toxic chemicals and pollutants before they are suspended and accumulate more chemicals and pollutants while in the air. Some claim that airborne dust in agricultural areas like Yuma are often covered with chemicals used for insecticides, herbicides, and fertilizers. The action plan does not

address this issue and neither does it present data or evidence that this is not a concern in the Yuma area?

In high wind events like the one described in the action plan, it seems like fertile topsoil would be lost to other regions. I did not notice anywhere in the action where your agency is working with the proper agricultural entities, be they local or federal, to help the farmers in Yuma preserve their fertile topsoil. Do you have any calculations as to how much topsoil has been lost over the years from Yuma fields?

Although I see stakeholders mentioned in the plan, I did not see any mention of a joint advisory committee on international air quality having been formed or any plans to form one in the future. I would like to volunteer my services to such a committee. I am trilingual, fluent in English, Spanish, and Italian. If this committee has not already been formed, do you intend to recruit representatives from the United States and Mexico governments? How will this committee overcome the major obstacle to clean air efforts, multiple jurisdictions? In reviewing your stakeholder list, it is evident that federal agencies, city governments, county government, and irrigation districts are all in the mix. Other border states have realized that this fragmentation of power exacerbates communication between the groups involved in keeping the air clean along the international border. The committee should allow nongovernmental organizations to serve. I would suggest that some local nongovernment participants may include local business owners, economic leaders, members of the Environmental Defense Fund, environmental scientists and other private environmental groups.

It is imperative that your Agency find the most cost effective and efficient ways to clean the local air along the Arizona border. I trust that you will relate to the federal government how you intend to accomplish this. Who is the funding source? Will funding come from the two national treasuries? The North American Development Bank and the Ford Foundation are examples of private organizations that have provided funding for environmental clean-up projects in the past. My suggested advisory committee would be the more cost effective way to deal with local air quality problems by allowing local leaders to meet and discuss the problems and how to best use private and public funding.

The action plan provides a comprehensive list of programs in an appendix that seem to have great potential to solve the dust problem in the Yuma area. However, there are no costs associated with these programs. Who will actually implement the dust programs in Yuma? Is there continual and sufficient funding guaranteed to implement these programs in Yuma? If these programs will be administered by the federal and Mexican governments, I should remind you that neither country has successfully decentralized the responsibility for tracking down pollutants and reducing them. For example, studies have shown that vehicles are the greatest offender, creating about 80% of local air pollution. Other sources are open burning of trash, home heating, improper fuel transport and storage, road dust from the many unpaved roads in the area, brick ovens, and solvents from painting and industry. Does your Agency have a plan or program to address these problems in the Yuma area and along the Mexico border?

Pollution emitted into the air disperses slowly in arid climates. Temperature inversions occur regularly during the cooler months and very hot days are common in the summer. As a result of these conditions, air pollution in border communities is bad. Yuma is extremely hot in the summer. What do you predict the trend of the air quality in the Yuma area will be over the next decade?

I hope you consider these comments in regards to the Yuma action plan. I have brought these issues to the attention of Mayor Albert Kramer. His office informed me that it is the state's and EPA's responsibility to address air quality and other environmental issues along the U.S. - Mexico border. Although the action plan is a good first attempt, I do not believe that the plan is broad enough in scope and leaves many questions unanswered. For example, it should include all of the border area of Arizona, including the communities of San Luis, Nogales, and Douglas in Arizona and San Luis Rio Colorado, Nogales, and Agua Prieta in Mexico. As a result of the rapid economic and population growth that has been occurring along the U.S.-Mexico border, of which the Yuma area is a prime example, the scope of the plan should be broadened.

Sincerely,
Dana Steen
Dana Steen

Dear Andra Juniel:

My name is Franklin Machias. I am a local farmer with some schooling in engineering. I have reviewed most of the material that is the subject of the public hearing. This material creates more questions than it answers. I have attempted to organize my input into themes. I am e-mailing my comments because time does not allow me to mail them to you in Phoenix. I hope ADEQ addresses these issues in the final documents.

Modeling Issues:

The modeling for the dust problem in Yuma was completed for August 18, 2002. It does not take into account the number of seasonal workers in Yuma during the summer.

The documents do not offer any information on the background levels of PM10 in the Yuma Nonattainment Area in absence of anthropogenic activity.

Nonattainment Area:

Yuma County is 5,522 square miles. The nonattainment area is only 456 square miles. Yuma County should be the limit of the nonattainment, or the nonattainment area should be expanded to include at least the rapidly growing community of San Luis.

Why doesn't ADEQ have jurisdiction over Indian lands? Indian reservations are in Arizona and in the Yuma Nonattainment Area. Indians in the Yuma area may engage in activities that detract from the air quality of the Yuma Valley. ADEQ needs to regulate Indian lands regarding air quality issues to assure the tribes do not ! unwittingly deteriorate the air quality of the Yuma Valley.

Air Assessments:

There is only one monitor to assess the air of the Yuma Valley. More monitors should be installed in the Yuma Valley. Monitors should be place alongside the mexican border to detect dust generated in Mexico which enters into the Yuma area as it did on the 18th.

Are air assessments being done for the Mohawk Valley to identify dust sources in that part of the County.

Where does Yuma rank in comparison with other nonattainment areas in Arizona?

Do our mountains to the east act as a natural barrier to wind-blown PM10 or do they concentrate PM10 in the! Yuma Valley?

Would ADEQ consider constructing large, outdoor fans at strategic points in the Yuma Valley to disperse high concentrations of PM10 before an exceedance of the 150 ug/m3 standard occurred?

ADEQ should begin a program to advise our winter visitors of the unhealthful air in the Yuma area. They should be asked to refrain from driving on unpaved roads and disturbing the desert-soil.

Are polluting vehicles from Mexico and other places addressed in the NEAP? Many diesel trucks from Mexico come to and pass through the Yuma

area. Are they being regulated with respect to the pollution they contribute to the Yuma area?

How can the Yuma area attract industry and employment that do not produce dust or contribute to our dust problem?

Yuma is in compliance at 150 ug/m³. On August 18, 2002 Yuma was at 170 ug/m³. How is one to interpret the extra 20 ug/m³? Is this increase due to a new source (or sources) of dust that appeared on the 18th or was this an increase in some, if not all, of the pre-existing sources on that day?

Does the research imply that the mountains to our east did not act as a natural barrier to keep dust pollution out of the Yuma Valley on the 18th? On a typical day, how do dust concentrations in the Mohawk Valley compare to dust concentrations in the Yuma Valley? How did these concentrations compare on the 18th?

So what does the reading on the 18th actually count for? Is it a bonafide violation? Or is it a violation that is ignored. Is it used for any other PM₁₀ statistics?

Ag! riculture:

Would a law passed requiring all farmland in the Yuma Valley to lay fallow at least one year in three help to reduce the PM₁₀ in our atmosphere and would ADEQ consider passing such a law? And since the soils in the Yuma area are level and well-drained, would ADEQ consider passing another law requiring extra watering of vacant farmland to reduce dust from this source?

ADEQ should identify the crops which produce the most dust in their production and focus on those crops to reduce PM₁₀ emissions.

ADEQ should require the farm that creates the most dust to move to perhaps the Mohawk Valley to preserve the air in the immediate Yuma area. The mountains would act as a natural barrier and prevent the dust from blowing into the Yuma Valley.

The dust in Yuma on the 18th must have partly originated from agricultural fields in Mexico and California. Did ADEQ meet with agricultural representatives from Mexico and California during this process?

PM₁₀ Sources:

Is the military conducting activities on the Barry M. Goldwater Air Force Range that may have negative impacts on our air quality?

If some of the dust problem originates from sources outside the nonattainment area, shouldn't the BACM controls be applied to them?

Dust Control:

There are no cost estimates presented with the BACM list of Appendix G. Is ADEQ prepared to provide the various entities funding or a portion of funding, if needed, to carry out these programs?

Although these controls might be suitable for the Salt River, they would not necessarily be suitable for the Colorado River and Gila River. Dust is also generated in the Yuma Valley, Mesa, and Desert. It is doubtful that these control measures developed for the Salt River and other areas would be suitable for the natural environments in the Yuma area.

Based on the EPA definition of BACM, all unpaved roads in the nonattainment area would have to be paved. Watering or chemical stabilization would not result in the maximum degree of emissions reductions from unpaved roads.

There are many entities that will have to apply BACM throughout the nonattainment area. How will ADEQ ensure that multiple entities will apply the same BACM uniformly and consistently throughout the nonattainment area? And in order to apply the most effective BACM, ADEQ will have to identify all soil types in the modeling domain. BACM would have to be applied in San Luis, Mexico, in parts of Imperial County, and in parts of rural Yuma County.

Again,
Franklin Machias

Ms. Juniel:

How often are regional-scale dust storms expected in the Yuma area? Why haven't other regional-scale dust storms that have occurred since 1991 resulted in a violation of the PM10 standard?

What is the normal PM10 reading in the Southwest deserts?

The report stated that insufficient samples were collected in 2001 to determine compliance with the standards. Is this delaying the Yuma area being redesignated as complying with the federal dust law?

Since the Yuma area shares the same air mass with western Chihuahua and eastern Sonora, shouldn't these places be required to help clean up their air and the air of Yuma?

Based on the evidence presented in the technical document, can it be concluded that drought conditions in Yuma and surrounding areas contribute to elevated PM10 levels in Yuma?

The report stated that before 2002, the last year that the 24-hour average PM10 standard was violated was in 1991. Why was the Yuma area not redesignated as complying with the PM10 standard in 1992 or 1993?

Why is the annual standard so much lower than the 24-hour average standard?

The report stated that from 1985 through 2002, the highest 24-hour average PM10 concentration in Yuma have exceeded the federal air quality standard of 150 ug/m3 a total of nine times. First of all, what does ug/m3 signify? If the air quality agency monitored more frequently in Yuma would more exceedances be recorded and could there possibly be more annual readings higher than 50.4 ug/m3? The upward trend towards higher concentrations of PM10 culminated in an annual average of 50.4 ug/m3 in 2002 in the Yuma area. At what point is the annual average standard actually violated? Does your air agency know if it was violated in 2003, or will be in 2004 or sometime in the near future? ! Shouldn't the air agency monitor more frequently to more accurately determine the trends in PM10 levels in the nonattainment area based on the anticipated growth in the Yuma area?

The report documented that other monitoring sites in the region showed dust concentrations as high as 700 ug/m3. Why are these areas not included in the report and required to control their dust? What was the amount of PM10 emissions originating from outside the nonattainment area that contributed to the 170 ug/m3 reading on August 12?

The frequency of rainfall can affect PM10 levels. Yuma already receives low rainfall. Is it correct to assume the area to have higher PM10 levels than other areas? How much did drought conditions in the Yuma area contribute to the probably already higher PM10 concentrations in Yuma? Will Yuma be at the mercy of regional drought conditions when it comes to PM10 loading? Will droughts in Mexico and California and the rest of Arizona cause a rise in ! PM10 levels in the Yuma area?

Does the Yuma area receive enough winter precipitation to reduce the potential for dust emissions during and after the winter season? Our winter precipitation is practically negligible. How much rain would Yuma have to receive during the winter season to have an effect on dust emissions in the following summer? How much rain is received in the Yuma area through monsoon storms? How strong is the causal relationship between rainfall and dust levels in the Yuma area?

The report established the relationship that in extremely dry years, such as 2002, the potential for high PM10 concentrations from high winds increases even more in Yuma. Why is Yuma being held responsible for PM10 levels that are driven by drought conditions in Mexico and California? Shouldn't those areas be required to control their share of the dust?

Thank you for your consideration.

Section I.6

Response to Comments

RESPONSE TO COMMENTS

Comment 1: The Yuma County employment information in Table II-3 of the proposed NEAP contains 2000 data. More current information is on the Yuma County website.

Response 1: Executive Order 95-2 requires state agencies to use Dept. of Economic Security (DES) population statistics for all official population estimates and projections. Table II-3 contains the latest information from DES. After review of the data from the Yuma County website, ADEQ found no substantial differences.

Comment 2: Table IV-2 in the proposed NEAP shows that there is some missing data for June, 2002. Please include the missing data in the document.

Response 2: As shown in the footnotes to the Table, at that time, the monitor was being moved from one location to another, and no data were obtained.

Comment 3: A commenter thought that there was a discrepancy in the TSD between the percentage contributions for agricultural fields. Chapter VI "Modeling Results" lists windblown dust from agricultural fields as "roughly 17.7% of all PM10 emissions predicted" whereas Figure VI-2 represents Ag Fields as 30% of windblown dust.

Response 3: The numbers are consistent. As shown in Figure VI-1, windblown dust as modeled accounted for 59% of all of the August 18, 2002 emissions. 30% of 59% is 17.7%.

Comment 4: What is the source of the rainfall data in Table 3-1?

Response 4: The National Weather Service.

Comment 5: Commenter posed various questions involving jurisdictional issues related to:

- why the boundaries of the Yuma PM10 Nonattainment Area exist as they are;
- why BACM will not be applied to PM10 sources outside the Yuma nonattainment Area, but which contribute to PM10 pollution in the area;
- what the impact and PM10 contribution of sources in Mexico, California, and on Indian reservations on the Yuma area is, and why Arizona has no ability to mandate controls to sources in those areas; and
- why the current NEAP does not address controls for summer seasonal workers in Yuma, and/or why the modeling does not take into account their numbers.

Response 5: EPA is the authority that designates the boundaries of nonattainment areas. ADEQ has no legal authority to impose BACM-level, PM10 controls on sources located outside nonattainment areas under the provisions of the Clean Air Act. Air pollution sources located in countries other than the United States lie outside the legal jurisdiction, authority, and control of Arizona and the United States. Sources located in states other than Arizona, lie outside the legal jurisdiction, authority, and control of ADEQ. Indian

tribes cooperate with the United States EPA in developing tribal implementation plans to address pollution control.

PM10 air pollution is a year-round problem in Arizona and elsewhere. ADEQ has no evidence that indicates that summer or winter part-time residents contribute to PM10 pollution in the Yuma PM10 Nonattainment Area any more than other types of workers.

Comment 6: Commenter requests a clarification of how EPA categorizes and describes the Yuma PM10 Nonattainment Area's level of nonattainment, in comparison with other PM10 nonattainment areas in Arizona.

Response 6: All of the current PM10 nonattainment areas in Arizona except Phoenix are classified by EPA as moderate. The Phoenix PM10 nonattainment area is classified as serious.

Comment 7: What are the "background" levels of PM10 in the Yuma nonattainment area in the absence of anthropogenic activity?

Response 7: ADEQ has operated a monitor at Organ Pipe National Monument since the mid-1980's, and used those data as the basis for establishing a background PM10 level.

Comment 8: Please address the adequacy of monitoring in the Yuma PM10 Nonattainment Area; is one monitor sufficient for the purposes of a nonattainment area like Yuma?

Response 8: According to EPA monitoring requirements, the one monitor is adequate. In addition, ADEQ is currently involved in a multi-year, EPA-funded monitoring study to assess pollution conditions on both sides of the U.S.-Mexico border.

Comment 9: ADEQ should begin a program to advise winter visitors of unhealthful air and to refrain from driving on unpaved roads and disturbing the desert soil.

Response 9: The Yuma NEAP is required to contain public notification and education programs in an effort to minimize public exposure to high concentrations of PM10 due to future natural events. The strategies described in the proposed NEAP however, do not limit themselves to winter visitors but are aimed at all people living and recreating in or near the nonattainment area.

Comment 10: What is the significance of the August 18, 2002 reading? Did the exceedance constitute a violation?

Response 10: If the Yuma NEAP is found to be acceptable, the reading of $170 \mu\text{g}/\text{m}^3$, which exceeds the standard of $150 \mu\text{g}/\text{m}^3$, will not count as a violation of the NAAQS. If no other violations are recorded, ADEQ plans to request that EPA redesignate the area to attainment based on clean data for the years 2002, 2003, and 2004. The August, 2002

exceedance will remain as the natural event that caused the NEAP to be developed for the Yuma area.

Comment 11: Would legislation requiring farmland to lie fallow one year out of every three would help and whether it was considered.

Response 11: ADEQ did not investigate whether such a law would help the Yuma dust problem. However, it should be noted that in some circumstances, a fallow or vacant field could produce more PM10 emissions than one that is covered with a crop.

Comment 12: What is the level of PM10 contribution provided by military activities on the Barry Goldwater Air Force Range on the Yuma PM10 Nonattainment Area.

Response 12: ADEQ has no evidence that activities in this area, most of which lies many miles to the east and south, have any significant impact on the PM10 levels in the Yuma nonattainment area.

Comment 13: Two commenters expressed concern regarding funding to support implementation of control measures.

Response 13: As described in the proposed NEAP, the primary responsibility for implementing control measures for the Yuma NEAP will fall on local entities (private, city, county) In addition, state and some federal resources will be available. Actual funding amounts for these measures have not been determined at this time. There is nothing in the NEAP that would be paid for by the country of Mexico.

Comment 14: What is ADEQ's rationale in listing control measures from the Salt River PM10 State Implementation Plan Revision in the Yuma NEAP?

Response 14: ADEQ is aware that the areas differ in both natural factors and types and level of human activities. However, many similarities also exist. The Yuma NEAP lists broad control measures that have significant probability of success in Yuma, even though some of them are similar to the Salt River control measures. It is also likely that some of the Yuma control measures will be modified or fine-tuned as dust control efforts progress.

Comment 15: Don't all unpaved roads in the Yuma PM10 Nonattainment Area have to be paved in order to meet EPA's definition of BACM?

Response 15: Not all unpaved roads would have to be paved to meet BACM requirements, which call for the maximum degree of emissions reduction considering economic factors. For example, it would not be cost effective to pave roads with a low traffic count.

Comment 16: How will the NEAP provide adequate, uniform compliance and enforcement for BACM throughout the Yuma PM10 Nonattainment Area?

Response 16: ADEQ has worked with law enforcement entities as well as city and county governments with the goal of making compliance and enforcement uniform, to the maximum extent practicable.

Comment 17: Shouldn't ADEQ should have to identify all soil types within the Yuma modeling domain in order to develop adequate BACM for the area?

Response 17: ADEQ recognizes that some variation in emissions does exist for different soils, but ADEQ's model does not contain separate emission factors for separate soil types. The agricultural controls being discussed should allow for farmers to vary dust management practices according to a number of factors, including soil type and crop.

Comment 18: How often are regional-scale dust storms expected in Yuma?

Response 18: These types of storms can be expected to occur several times a year in southern Arizona. These storms are also called mesoscale convection systems, and are described in the proposed NEAP at page 20. However, the one on August 18, 2002, was extremely unique, both in terms of its size and route. ADEQ is not aware of another one like that happening in recent history.

Comment 19: Why haven't other dust storms since 1991 resulted in violations?

Response 19: The Yuma PM10 monitor is run on a one in six day cycle. If storms similar to August 18, 2002, did occur in the Yuma area, it is possible that they occurred on a day when the monitor wasn't running.

Comment 20: Did insufficient samples in 2001 delay redesignation of the Yuma area?

Response 20: Yes, in part. The August, 2002 exceedance also contributed to the delay.

Comment 21: Do drought conditions in Yuma contribute to elevated PM10 levels?

Response 21: They can. Because the Yuma area is so dependant on irrigation, the level of impact of the current drought would be very difficult to ascertain.

Comment 22: Why was Yuma not redesignated in 1992 or 1993?

Response 22: The Clean Air Act has a step-wise procedure for redesignation, which includes having an approved nonattainment area plan before requesting redesignation. ADEQ submitted the Yuma Nonattainment Area Plan to EPA in 1994, which EPA has yet to act upon.

Comment 23: Why is the annual standard so much lower than the 24-hour standard?

Response 23: Violating the annual standard represents a predicted 365 days of exposure at the monitor at greater than 50 micrograms per cubic meter, whereas violation of the 24 hour standard represents exposure at the 150 micrograms per cubic meter level, but just for one day. The rationale for this approach is that the lungs and body can recover from higher exposures if the exposure occurs for a shorter time.

Comment 24: What does $\mu\text{g}/\text{m}^3$ mean?

Response 24: It means micrograms per cubic meter, which is mass of PM10 per unit volume of air.

Comment 25: Would more frequent monitoring in Yuma reveal more exceedances? Why doesn't ADEQ monitor more frequently?

Response 25: More exceedances would probably be measured if monitoring occurred more frequently than one in six days. Because operating a PM10 monitor is expensive and labor-intensive, ADEQ does not have the staff or financial resources to do more frequent monitoring.

Comment 26: How are PM10 annual average standards violated?

Response 26: The federal PM10 standard and interpretation of PM10 data are contained in EPA regulations 40 CFR 50.6 and Appendix K of 40 CFR, Part 50. The annual average used for determining compliance with the standard of 50 $\mu\text{g}/\text{m}^3$ is calculated as follows: 1) Calculate the quarterly averages as the arithmetic mean of all samples collected during each quarter of a year (sum of all of the readings divided by the number of readings); 2) Calculate the annual average as the arithmetic mean of the 4 quarterly averages; and 3) Calculate the arithmetic mean of the 3 consecutive year annual averages. If the number rounds to 51 or more, then the annual average has been violated. This procedure may seem convoluted, but is designed to allow for calculation of averages where there are data missing and to prevent particular seasons or abnormal years from having an undue influence on the annual average number.

Comment 27: Was the PM10 annual average standard violated in 2003? Will it be violated in 2004?

Response 27: This information is not yet available.

Comment 28: How much rain does Yuma receive through monsoon storms?

Response 28: This amount can be estimated from looking at Table 3-1 in the TSD. The July, August, and September averages add up to a little more than one-third of the average annual rainfall over the past 10 years.

Comment 29: The study area and scope for the Yuma NEAP includes border communities such as Douglas and Nogales, and should include such border sources as

trash burning, home heating, improper fuel transport, brick ovens and solvents from painting and industry. Commenter asks for information about population growth in border communities outside the Yuma NAA, and whether ADEQ has a plan for such border sources.

Response 29: The Yuma NEAP does not cover communities or sources outside the current Yuma PM10 nonattainment area. Commenter is referred to "Border 2012: U.S.-Mexico Environmental Program"; EPA160-R-03-001, for information about population growth and air pollution sources in border communities.

Comment 30: Has ADEQ performed health studies of respiratory illness, or tracked the long term health effects of high dust in Yuma?

Response 30: ADEQ has not conducted health related studies in Yuma and is not aware of any studies that relate to the particular areas mentioned by the commenter. ADEQ's statutory authority is to enforce the National Ambient Air Quality Standards in the state. Commenter is referred to EPA "criteria documents" for general health effects information of particulates, (see http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_index.html) and the Yuma County Health Dept. and Arizona Dept. of Health Services for possible information on dust-related health effects.

Comment 31: What are the health related effects of suspended dust on small children?

Response 31: According to a current EPA publication on particle pollution, "[c]hildren are likely at increased risk for several reasons. Their lungs are still developing; they spend more time at high activity levels; and they are more likely to have asthma or acute respiratory diseases, which can be aggravated when particle levels are high." (See "Particle Pollution and Your Health" at <http://www.epa.gov/airnow/particle/airborne.html#2>. More information can also be found at the above web address.

Comment 32: ADEQ should establish a warning for sensitive populations to warn them of future natural events like August 18, 2002.

Response 32: ADEQ has begun a daily Yuma wind forecast that forecasts winds 3 days in advance. The forecast can be found at <http://www.adeq.state.az.us/environ/air/ozone/yumawind.pdf>. In addition, discussions are ongoing concerning other public education and outreach strategies.

Comment 33: The NEAP does not address claims that airborne dust particles are often laced with toxic chemicals such as insecticides, herbicides, and fertilizers. Is this a concern in the Yuma area?

Response 33: The NEAP does not address the chemical characteristics of dust particles because the national standard for particulates is not concerned with the chemistry of the particles. After considering whether or not the standard should take into account the

chemical nature or toxicity of the particles, EPA decided that the standard should be based on weight and size and not the chemical nature of the particle.

Comment 34: How much topsoil has been lost from Yuma fields? Is ADEQ working with agricultural agencies to preserve topsoil?

Response 34: It is beyond the scope of the NEAP to estimate soil loss from erosion. This is under the jurisdiction of the USDA's Natural Resource Conservation Service-Yuma office.

Comment 35: Commenter suggests that an advisory committee on international air quality would be a cost effective way to deal with local air quality problems.

Response 35: ADEQ's modeling has shown that local PM10 sources have the most effect on the PM10 monitor in Yuma. ADEQ's stakeholder efforts have been open and public, and have included anyone who could attend public meetings or write about the local dust problems. This has resulted in participation by some of the other private interests mentioned by the commenter. Commenter is referred to "Border 2012: U.S.-Mexico Environmental Program"; EPA160-R-03-001, for information about international efforts in air quality.

Comment 36: There are no costs listed for the control measures contained in the Appendix. Is there continual and sufficient funding for these measures?

Response 36: Each of the candidate control measures listed in the NEAP has been preliminarily identified for their possible economic and technical feasibility. However, at this stage, no costs have been developed. Once control measures are adopted, some further cost information should be available.

Comment 37: What does ADEQ predict the air quality in Yuma to be for the coming decade?

Response 37: ADEQ will be in a better position to make such a prediction after the NEAP is in place, and the maintenance plan is developed. The maintenance plan must demonstrate that the area will meet the NAAQS for 10 years. ADEQ is hopeful that the maintenance plan to be developed by 2005 will be able to demonstrate attainment through 2015.